United States
Department of
Agriculture

Forest Service
R10-MB-736e

June 2013

Big Thorne Project
Thorne Bay Ranger District,
Tongass National Forest

Record of Decision

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers, employees, and applicants for employment on the bases of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the Department. (Not all prohibited bases will apply to all programs and/or employment activities.)

To File an Employment Complaint:
If you wish to file an employment complaint, you must contact your agency's EEO Counselor (PDF) within 45 days of the date of the alleged discriminatory act, event, or in the case of a personnel action. Additional information can be found online at http://www.ascr.usda.gov/complaint_filing_file.html.

To File a Program Complaint:
If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

Persons with Disabilities:
Individuals who are deaf, hard of hearing or have speech disabilities and who wish to file either an EEO or program complaint, please contact USDA through the Federal Relay Service at (800) 877-8339 or (800) 845-6136 (in Spanish).

Persons with disabilities who wish to file a program complaint, please see information above on how to contact us by mail directly or by email. If you require alternative means of communication for program information (e.g., Braille, large print, audiotape, etc.) please contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

USDA United States Department of Agriculture | Forest Service | Alaska Region Tongass National Forest | 648 Mission Street Ketchikan, AK 99901 Phone: (907) 225-3101 Fax: (907) 228-6215

File Code: 1950
Date: June 28, 2013

Dear Planning Participant:

Here is your copy of the Record of Decision (ROD) for the Big Thorne Project on the Thorne Bay Ranger District, Tongass National Forest. The Record of Decision documents my final decision on the Selected Alternative and the facts considered in reaching the decision. The effective date of implementation of the decision and the notice of rights of appeal are also specified in the ROD.

Copies of the ROD and the Final EIS have been directly mailed to those people who requested to be on the project mailing list. Copies of this ROD and Final EIS area also available for review at Forest Service offices throughout the Tongass and online at:
http://www.fs.fed.us/r10/tongass/projects/projects.shtml

For additional information, please contact the Thorne Bay Ranger District at 907-828-3220 during regular business hours, Monday-Friday, 8 am to 4:30 pm.

As the Forest Supervisor, I am responsible for this decision. I want to thank those of you who took the time to review and comment on the Draft Environmental Impact Statement. Your interest in the management of the Tongass National Forest is appreciated.

Sincerely,

FORREST COLE
Forest Supervisor

This page intentionally left blank.

Big Thorne Project

Record of Decision

United States Department of Agriculture, Forest Service Alaska Region

---

Lead Agency: USDA Forest Service
Tongass National Forest

Responsible Official: Forrest Cole, Forest Supervisor
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

For Information Contact: Frank Roberts,
Thorne Bay Ranger District
P.O. Box 19001
Thorne Bay, Alaska 99919
(907) 828-3250
fwroberts@fs.fed.us

Abstract

The Responsible Official has selected Alternative 3 from the Big Thorne Project Final Environmental Impact Statement, with modifications. This decision will make approximately 148.9 million board feet of timber available for harvest from approximately 6,186 acres of old-growth and 2,299 acres of young-growth commercial forest land.

This page intentionally left blank.

Record of Decision

Big Thorne Project

USDA Forest Service
Thorne Bay Ranger District
Tongass National Forest Alaska

SUMMARY

Based upon my review of the Big Thorne Project Final Environmental Impact Statement (FEIS), and relevant scientific research and monitoring, I have decided to implement Alternative 3 (Selected Alternative) (FEIS, Chapter 2), with minor modifications. This decision includes the Resource Protection Measures (FEIS Chapter 2) and the Best Management Practices (FEIS, Appendix 2) designed for this project. The FEIS is in compliance with the National Environmental Policy Act 42 U.S.C. 4321 et seq. (NEPA), the National Forest Management Act of 1976, and all other relevant Federal and State laws and regulations. The Selected Alternative will harvest timber from 6,186 old growth acres of commercial forest land and thin 2,299 acres of young growth to contribute approximately 148.9 million board feet (MMBF) of sawlog and utility timber volume to the Tongass National Forest timber sale program. The timber will be harvested by conventional logging systems (shovel or cable) or by helicopter. Even-aged management (clearcut) and uneven-aged management (single tree selection) will be used. The Selected Alternative includes construction of 46.1 miles of new road and will reconstruct 36.6 miles of existing National Forest System (NFS) road. This includes 24.1 miles of new temporary road construction and 11.9 miles of temporary road construction on decommissioned road beds. Small Old-growth Reserves (OGRs) in Value Comparison Units (VCUs) 5790, 5800, 5810, 5820, 5830, 5850, and 5950 will be modified (as described below). Design features of timber harvest units in this decision are described in detail on the unit and road cards in Appendices 1 and 2 to this ROD. Existing log transfer facilities (LTFs) will be used if needed.

The Forest Service has prepared the Final Environmental Impact Statement (Final EIS or FEIS) to analyze the potential impacts of timber harvesting and road management in the Big Thorne project area. This Final EIS is in compliance with the National Environmental Policy Act 42 U.S.C. 4321 et seq. (NEPA), the National Forest Management Act of 1976, and all other relevant Federal and State laws and regulations.

PROJECT AREA

The Big Thorne project area is located in Southeast Alaska on Prince of Wales Island, around the community of Thorne Bay and south of Coffman Cove (Figure 1) and covers approximately 232,000 acres of lands, including about 14,000 acres of State and private lands (non-NFS) and 218,000 acres of NFS lands. Three land use designations (LUDs) comprise 84 percent of the project area; these consist of Old-Growth Habitat, Timber Production, and Modified Landscape, in descending order of abundance. The Scenic River LUD along the Thorne River-Hatchery Creek system also comprises significant acreage. The remaining LUDs consist of Scenic Viewshed, Recreational River, Research Natural Area, and miscellaneous small acreages. Combined, the three primary timber management LUDs (Timber Production, Modified Landscape, and Scenic Viewshed) comprises about 124,000 of the 218,000 acres of NFS lands in the project area. A fairly extensive road system already exists and an operating medium-sized sawmill exists on the island along with numerous small mills.

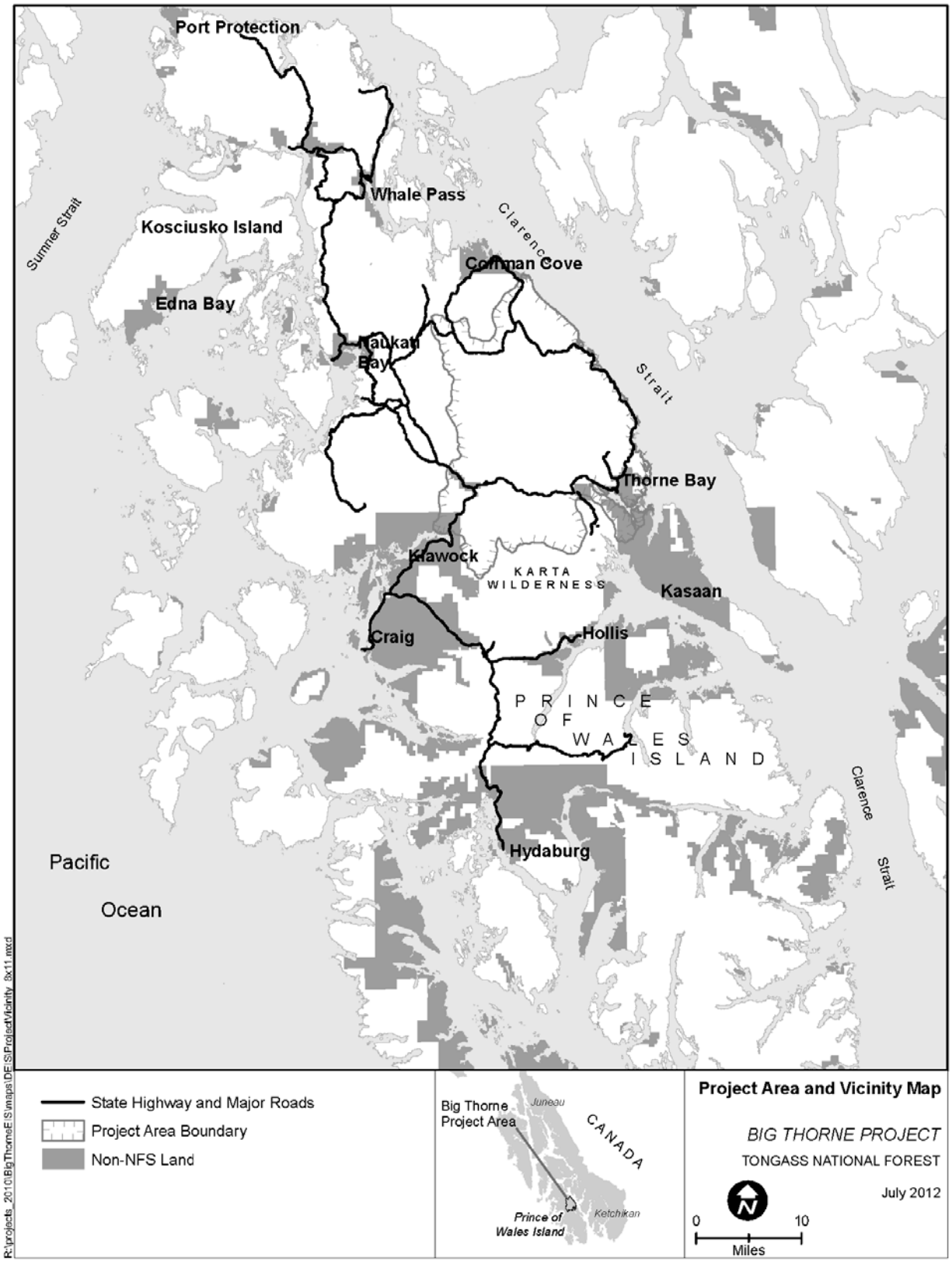

Figure 1. Project Area and Vicinity Map

DECISION

This ROD documents my decision to implement Alternative 3 from the Big Thorne Final EIS, with modifications;

In making my decision I considered:

- The 2008 Forest Plan and responding to the Tongass Adaptive Management Strategy.
- How this project will assist with the transition to young growth management on the Tongass National Forest.
- Meeting the purpose and need for this project.
- The need to provide an economic timber offering that will contribute to the annual market demand for Tongass National Forest timber.
- Maintaining and enhancing local timber processing capacity while providing diverse opportunities for natural resource employment.
- Public comments received for this project regarding issues such as wildlife habitat, subsistence, cumulative watershed effects, and economics.
- The relative effects and outputs of the No Action Alternative and all four action alternatives, discussed in the FEIS.

SELECTED ALTERNATIVE

The Selected Alternative includes harvesting approximately 148.9 MMBF of timber on about 6,186 acres of old growth using conventional and helicopter yarding systems and thinning about 2,299 acres of young growth using conventional yarding systems. The old-growth silvicultural prescriptions include up to 3,763 acres of even-aged management (clearcutting) and 2,424 acres of uneven-aged management (50 to 75 percent retention). The old-growth harvest will include approximately 842 acres in Phase 2 lands of the Tongass Timber Sale Program Adaptive Management Strategy (USDA Forest Service 2008b), which will be reserved for small timber sales. Design features for timber harvest units in this decision are described in detail on the unit cards in Appendix 1 of this ROD.

Road construction includes approximately 46 miles of new road (10 miles of new NFS road and 36 miles of temporary road). Approximately 36.6 miles of existing NFS road will be reconstructed. Approximately 32 acres of rock quarries will be developed for road construction and reconstruction. The Road Management Objectives (RMOs) for ongoing maintenance and design features of new NFS roads and existing NFS roads to be reconstructed for this decision are described in detail on the road cards in Appendix 2 of the ROD. Temporary roads are shown on the unit cards, in Appendix 1. If needed, log transfer facilities (LTFs) may be used to transport the timber from Prince of Wales Island to other locations using barging and/or rafting as the permit allows.

MODIFICATIONS FOR THE SELECTED ALTERNATIVE

I am making the following modifications to Alternative 3 as described in the FEIS in this decision:

- To improve economics, all units to be yarded by helicopter will be implemented with uneven-aged management silvicultural systems. The amount of prescribed retention will be 50 percent of the original basal area except for units prone to high wind disturbance which will have 75 percent retention. Effects to biodiversity would be expected to be lessened under uneven-aged harvest prescriptions, which leave some portion of the trees standing in a unit. Alternatives that include the more uneven-aged harvest are expected to maintain more biodiversity and retain more old-growth characteristics across the landscape than units harvested using even-aged systems. Although uneven-aged prescriptions maintain more forest structure and biodiversity within harvested stands, these areas may not reduce the current and potential future damage to the stand through removal of insects, diseases, and decaying trees as effectively as even-aged harvest. Where uneven-aged management is prescribed in place of even-aged management, growing space is limited by the retention of overstory trees. Natural regeneration should occur in the stand in satisfactory amounts; however, the limited openings in the canopy combined with the low ground disturbance of helicopter yarding may favor hemlock regeneration and may limit the regeneration of the cedars and spruce. The uneven-aged prescriptions offset this by retaining spruce and cedar advanced regeneration. Based on the amount of POG selected for harvest, the amount of even-aged harvest, and increases in the number of POG patches, effects to biodiversity would be greatest under Alternative 3, followed by Alternatives 2, 5, 4, and 1. The effects to biodiversity for the Selected Alternative are between Alternative 3 and Alternative 2.
- In response to the comments requesting road closures to help maintain wolf sustainability, I have conferred with a group of interagency wildlife biologists. They advised me that it would be better to focus road closures within or immediately adjacent to the Honker Divide large OGR which provides a core area of secure habitat for area wolf packs. Therefore I have decided to seasonally close the following existing roads in Table ROD-1 during wolf trapping/hunting season (December 1 to May 1) to reduce the vulnerability of wolves inhabiting this area. The roads will be open the rest of the year for public access.

Table ROD-1. Roads to be Seasonally Gated for Wolf Habitat

3030700
3030750
3035190
3035050
3030850
3030860
3000348
3000346
3000347
3000340

- I have selected alternative locations for small old-growth reserves for VCUs 5790, 5800, 5810, 5820, 5830, 5850, and 5950 as described in more detail below. These modifications resulted in a non-significant amendment to the Forest Plan which is described in detail in Appendix 3 of this ROD.
- I have decided to not modify the OGR boundaries as depicted in Alternative 3 for VCUs 5840, 5860, 5960 and 5972. This will maintain current connectivity, large blocks of POG, low elevation POG, deep snow deer and marten habitat and potential goshawk and marbled murrelet nesting habitat.
- The Selected Alternative modifies the OGR in VCU 5790 by allowing a small, 5-acre harvest setting/unit while retaining the westernmost block of POG within the OGR. This westernmost block of POG is considered a key element of the corridor that this small OGR was designed to protect. This block of POG provides a connection to the Honker large OGR complex through the complex of small OGRs in VCUs 5790, 5800, and 5840 to the coast and its retention within the OGR allows for a comparable achievement of the characteristics sought in an OGR thus maintaining connectivity and providing a comparable achievement.
- Modifications in VCU 5800 maintain the purpose and rationale of maintaining OGR protection for the wildlife migration corridor through a low elevation river drainage that connects the Honker Large OGR to the coastline through the current Small OGRs in VCUs 5800 and 5840 and important winter habitat in the valley bottom. Therefore it is determined that the proposed modification does provide a comparable achievement.
- The proposed modification in VCU 5810 makes no changes to the South OGR. The north OGR contains about 1,560 acres, of which about 608 acres is POG. In 2000, under a previous decision changes were made to the OGR that resulted in reduction of POG below the Forest Plan requirement. Although on the surface this appears to be inconsistent with the Forest Plan, legacy acres and stream buffers among these units and extending to the existing OGR maintain some elevation travel corridors for wildlife. In addition, the Selected Alternative makes no changes to the south OGR which contains 2,188 acres, including about 1,421 acres of POG, which will continue to meet the goals and objectives of the Old Growth Habitat LUD and fulfill habitat conservation and timber harvest objectives.

Therefore it is determined that the proposed modification does provide a comparable achievement.

- The modification in VCU 5830 drops all of the old growth units that were in the OGR. However the boundary of this OGR is modified as a result of reassigning acres that were a part of this OGR but previously mapped in VCU 5820 to the OGR in VCU 5820. To increase POG acres in this VCU (5830), acres were added along the northern VCU boundary as well as to the southeast portion of the OGR. The acres added in the southeast are some of the acres recommended by the 2011 IRT. Dropping the old growth harvest units maintains the low elevation, high volume stands in the area and connectivity to the OGR in VCU 5820. There are two commercial thinning units within the modified OGR boundary. Treatments in the commercial thinning area will improve wildlife habitat in the area. These changes result in the OGR for the Selected Alternative providing a comparable achievement.
- The changes in VCU 5850 drops all units in the modified OGR except one, thus maintaining most of the high value, low elevation stands, and most of the remaining blocks of contiguous low elevation POG in this VCU. The one remaining unit is located on the west side of the Sandy Beach road. The coastline that provides important salmon, waterfowl, and black bear habitat and has documented high recreational use is maintained in the OGR for the Selected Alternative. Harvest of the unit remaining will result in a reduction of POG acres currently protected by the OGR. The unit itself is about 58 acres and part of those acres are single tree selection. It is determined that the OGR in the Selected Alternative will provide a comparable achievement.
- The change in VCU 5950 includes all harvest units within the modified OGR. The 2011 IRT was not opposed to the proposed units in the roaded OGR land base along the northern portion of the OGR. There was some discussion on the effects of the proposed units in this area severing the connection to the Honker complex to the north; however this connection is already severed by the State land selection in this area. The modification adds the high-elevation acres along the west side of the OGR and will provide comparable achievement of Old-growth LUD goals and objectives.
- In response to concerns that we would not be meeting the Old-growth Habitat LUD goals and objectives. I have decided to drop the following units from OGRs. The LUD modifications associated with the changes to OGRs in the Selected Alternative are displayed in the ROD map in the map packet of the FEIS. The net change in the area of Old-growth Habitat LUD within the project area will be an increase of about 645 acres. Mapped Suitable Timber acres increase by about 543 acres.

Table ROD-2. Harvest Units Dropped from Alternative 3

VCU	Units
5810	464, 465, 466, 473,475,476, south piece 470
5820	461*, 463, 212, 213
5830	460, 461*
5840	452, 454, 455, 456, 457
5850	435
5860	426,427,428,429,430,431,433,434
5800	439, 446, 448, 450, 447**
5790	424
5972	413, 414,419,420,421,422,423
5950	None
5960	No change to OGR

*461 is in VCUs 5820 and 5830
** Half of the unit in the OGR is dropped and the other half in TM LUD will be kept.

- Most new and reconstructed NFS system roads for this project (that are designated to be stored) will remain open for one to five years after the timber contracts close to allow for public use and salvage opportunities. At the time of road storage, any "red pipes" that do not maintain fish passage through them at all flows on the reconstructed roads will be removed. Due to the resource concerns listed below I have decided that the following list of roads (Table ROD-3) will not remain open for one to five years after the timber contract closes but will be closed as soon as possible.

Table ROD-3. Roads That Will Be Stored As Soon As Possible after the Timber Contract Closes

Road Number	Reconstruction / New Construction	Red pipe	Concern or Rationale
3000301	Reconstruction	No	Wildlife concerns, road is in an Old growth Reserve, Watershed concerns
3000303	Reconstruction	No	Wildlife concerns, road is in an Old growth Reserve
3015000	Reconstruction	No	Wildlife concerns, minimize human disturbance due to wolves, connectivity; scenery/recreation concerns
3015200	Reconstruction	No	Wildlife concerns, proximity to Honker Divide OGR and importance to wolves; scenery/recreation concerns, proximity to Scenic River corridor and Snakey Lakes
3015230	Reconstruction	No	Wildlife concerns, proximity to Honker OGR and importance to wolves; scenery/recreation concerns, proximity to Scenic River corridor, Snakey Lakes
3015700	Reconstruction	No	Wildlife concerns, minimize human disturbance due to wolves, connectivity; scenery/recreation concerns, maintain unroaded character
3016400	Reconstruction	No	Wildlife concerns, proximity to Honker OGR and importance to wolves
3023535	Reconstruction	No	Wildlife concerns, minimize human disturbance, connectivity
3012200	Reconstruction	Yes	Red pipe (MP 0.14) needs to be removed or replaced (moderate priority based on habitat and other factors)
3012210	Reconstruction	Yes	Red pipe (MP 0.76) needs to be removed or replaced (low priority based on habitat and other factors)
3017300	Reconstruction	Yes	Red pipe (MP 0.02) needs to be removed or replaced (low priority based on habitat and other factors)
3017350	Reconstruction	No	Riparian concerns, higher risk of riparian impacts
3018100	Reconstruction	Yes	Red pipe (MP 0.89) needs to be removed or replaced (moderate priority based on habitat and other factors), Watershed concerns, Deer Creek 3.2 to 3.5% basin as roads, Salamander 2.9 to 3.2% basin as roads, Slide Creek 2.8 to 2.9% basin as roads
3018110	Reconstruction	Yes	Red pipe (MP 0.47) needs to be removed or replaced (moderate priority based on habitat) and red pipe (MP 0.55) needs to be removed or replaced (moderately high priority based on habitat and other factors), Watershed concerns, Deer Creek 3.2 to 3.5% basin as roads, Salamander 2.9 to 3.2% basin as roads, Slide Creek 2.8 to 2.9% basin as roads
3018250	Reconstruction	Yes	Red pipe (MP 0.08) needs to be removed or replaced (high priority based on habitat and other factors), Watershed concerns, Slide Creek 2.9% basin as roads
3023530	Reconstruction	Yes	Red pipe (MP 0.29) needs to be removed or replaced (high priority based on habitat and other factors); wildlife concerns, minimize human disturbance, connectivity;

			riparian concerns, higher risk of riparian impacts
3030100	Reconstruction	Yes	Red pipe (MP 1.53) needs to be removed or replaced (moderately high priority based on habitat and other factors). Recreational access to Eagle Creek corridor.
3000301	New Construction	No	Wildlife concerns, part of road is in an Old growth Reserve, Watershed concerns, Ratz Harbor 2.6 to 3% basin as roads
3013154	New Construction	No	Wildlife concerns, near wolf den; recreation concerns, near Angel Lake
3015240	New Construction	No	Wildlife concerns, proximity to Honker Divide OGR and importance to wolves; scenery/recreation concerns, proximity to Scenic River corridor
3015241	New Construction	No	Wildlife concerns, proximity to Honker Divide OGR and importance to wolves; scenery/recreation concerns, proximity to Scenic River corridor
3016450	New Construction	No	Wildlife concerns, proximity to Honker Divide OGR and importance to wolves; scenery/recreation concerns, proximity to Scenic River corridor

- In response to concerns about the effects to sensitive plants I have decided to implement a botany monitoring plan that is part of this decision. If any previously undiscovered sensitive plants are encountered at any time prior to or during implementation of this project, the Forest Service botanist/ecologist shall be notified. Following review of the population, avoidance measures or mitigation measures may be applied. The Big Thorne Monitoring and Evaluation Plan for Rare and Sensitive Plants is recommended for this project, and includes efforts to ensure that the mitigation measures are carried through project implementation, and to provide information on the direct and indirect effects of harvest on this species. The project level monitoring will be done in conjunction with the ongoing Forest-wide pilot project to provide additional information of the species and population change. This Monitoring and Evaluation Plan has been developed to address the Forest Plan Standards and Guidelines for Plants in order to review the implementation, effectiveness of conservation actions, and apply adaptive management principles in the future.

REASONS FOR THE DECISION

In making my decision, I considered the objectives to meet the purpose and need for this project as well as the issues and concerns that arose during scoping and comments on the DEIS, both in support and opposition of this project. I considered Forest Plan direction relevant to this project and the competing interests and values of the public. I considered all viewpoints and incorporated them where feasible and consistent with the purpose and need of the project. I evaluated the trade-off between resource protection and social values. The Selected Alternative provides a beneficial mix of resources for the public, within a framework of existing laws, regulations, policies, public needs and desires, and the capabilities of the land, while meeting the stated purpose and need for this project. My

decision to implement the Selected Alternative conforms to the Forest Plan and National Forest Management Act (NFMA).

I considered the need to manage this timber resource on the Tongass National Forest in order to produce an even-flow of sawtimber and other wood products. Appendix A of the Big Thorne Project Final EIS describes the process that maintains a steady supply of timber and how each project goes through a series of steps before timber can be offered from the National Forest. I considered the concerns for providing economical timber sale offerings and the need to seek to meet annual demand for timber. This decision provides 148.9 MMBF of timber volume for the timber industry.

The financial efficiency of the Selected Alternative shows this alternative as being positive. The Selected Alternative provides support for a projected 600-689 direct annualized jobs and opportunities for a variety of sale sizes appealing to small local operators as well as larger operators in Southeast.

New and reconstructed system roads will be closed and placed in storage as described in the road cards, and all temporary roads will be decommissioned after the completion of timber harvest activities. This decision includes gating 15 miles of road to provide a seasonal motorized vehicle closure during the wolf hunting/trapping season (December 1 to May 1). This will affect wolf trappers and subsistence users but will provide better habitat security for wolves.

I acknowledge that implementation of the Selected Alternative will result in localized; short-term increases in sediment delivery and subsequent turbidity in streams from road construction and maintenance activities. However, these will be short-term and within the guidelines of the State water quality standards. Implementation of Best Management Practices will assure that water quality and fish habitat will not be impaired. I have incorporated scheduling of road storage and harvest activities in the Selected Alternative to minimize cumulative watershed effects.

I am aware that Prince of Wales Island residents use the project area for subsistence deer hunting. Many comments were received during scoping and during the comment period for the DEIS that demonstrate public concern for not only subsistence use in the project area and related access, but the effects of further harvest in the project area to deer habitat. In making my decision; I have weighed the need for access against the need for resource protection and Table ROD-3 lists the roads that need to be closed as soon as possible to protect the different resources.

I have considered the need of expanded access for resources such as firewood and to facilitate short-term forest management activities, such as non-commercial thinning and microsales. Therefore, I have identified about 15 miles of road (see road cards for road specific information) that will be left open for up to five years after contractual harvest activities have been completed.

Collectively, new roads associated with the Big Thorne Project, in addition to those resulting from other projects, will temporarily improve access and reduce competition. The Selected Alternative will implement the Prince of Wales Island ATM, under which additional road closures will occur as funding allows, reducing access to subsistence resources over the long term (USDA Forest Service 2009a).

The Record of Decision (ROD) for the 2008 Forest Plan Final EIS (USDA Forest Service 2008b) concluded that the "deer habitat capabilities in areas of the Tongass with heavier timber harvest may not be adequate to sustain current and future deer harvest levels, and that increased competition for deer harvest may cause a significant possibility of a significant restriction in the future." The cumulative effects analysis in the 2008 Forest Plan Final EIS concluded that full implementation of the Forest Plan may result in a significant restriction to subsistence use of deer due to the potential effects of projects on the abundance and distribution of this resource, and on competition for this resource (USDA Forest Service 2008b). I have determined that, in combination with other past, present and reasonably foreseeable future actions, this decision (if implemented through project-level decisions and actions) may result in a significant restriction of subsistence uses of deer, due to potential effects on abundance and distribution, and on competition. This determination is based on the analysis completed for the Big Thorne FEIS alternatives and an increase in subsistence activities, and the capability of the habitat to produce deer.

Under all alternatives, hunter success would be expected to remain high in WAA 1319, decline in WAA 1318, and be directly or indirectly reduced through harvest restrictions or difficulty obtaining deer in WAAs 1315 and 1420 at project completion and stem exclusion (FEIS Tables WLD-38).

Commercial thinning will improve deer habitat by extending the period during which forage is available in the stands. Over time, these actions will increase deer habitat capability, and therefore potentially the abundance and distribution of deer available to hunters. An Interagency wildlife biologist group has identified some possible areas (more details on which areas and the prescriptions are in the project record) near Thorne Bay and Coffman Cove where the commercial thinning may improve the deer habitat near those communities. To the extent possible I have modified thinning prescriptions to improve deer habitat in those areas. This will not create a large change in the Big Thorne project area for deer habitat but I believe it will make a small improvement. Improvements in deer habitat capability may also reduce necessity for hunting restrictions.

Section 810 of ANILCA requires the Forest Service, in determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of NFS lands in Alaska, to evaluate the potential effects on subsistence uses and needs, followed by specific notice and determination procedures should there be a significant possibility of a significant restriction of subsistence uses. Section 811 of ANILCA requires that rural residents engaged in subsistence uses have reasonable access to subsistence resources on public lands. The road system within the Big Thorne project area will continue to provide rural residents with reasonable access for subsistence uses. The Environmental Assessment for the Prince of Wales Access Travel Management (ATM) Plan analyzed access for subsistence use on Prince of Wales Island. The decision for the road management objectives for the existing roads on Prince of Wales Island and surrounding islands was based on this analysis.

I considered the effects on wildlife habitat by looking at the reduction of productive old growth (POG) which impacts habitat connectivity. The Selected Alternative will reduce the levels of POG, at all elevations, to 49 percent of the original condition (1954) for the North Central Prince of Wales biogeographic province. Uneven-aged prescriptions (50 to

75 percent retention) have been prescribed in many units in order to maintain structural diversity. By retaining a large percentage of the stand, connectivity and other habitat values will be maintained in these units. Although volume class will change, these prescriptions are not expected to remove all the POG characteristics. Where 75 percent retention is prescribed, it is expected that the structural change post-harvest will be only minor and the stand will remain in the old-growth structural stage after harvest and into the future.

The Big Thorne ROD and FEIS include modifications to relocate the small OGRs within the 2001 Roadless Rule inventoried roadless areas. The purpose is to allocate the portions of the current OGRs that contain existing roads and past harvest units to development LUDs where timber harvest is allowed. The portions of existing OGRs that were relocated under the ROD are reallocated to Timber Production, Modified Landscape, and Scenic Viewshed LUDs, based on the adjacent LUDs and Visual Priority Travel Routes and Use Areas to address scenery concerns. Where necessary, the acres that are allocated from the OGRs into development LUDs have been replaced with acres from the Roadless areas.

The proposed OGR modifications in the Selected Alternative provide a comparable achievement of the goals and objectives for the Old Growth Habitat LUD by maintaining areas of old-growth forests and their associated natural ecological processes to provide habitat for old-growth associated resources. All proposed OGRs maintain areas of old growth forests by meeting, or exceeding, the Forest Plan standard and guideline requirement of being 16 percent of the Forest Land in the VCU and half of the 16 percent being POG acres. By meeting or exceeding the acre requirements the proposed OGRs also maintain the objectives of the Old growth habitat LUD by providing old-growth forest habitats, in combination with other LUDs, to maintain viable populations of native and desired non-native fish and wildlife species and subspecies that may be closely associated with old-growth forests; the proposed OGRs contribute to the habitat capability of fish and wildlife resources to support sustainable human subsistence and recreational uses by including habitats such as Class I fish streams, important deer winter range and low elevation POG areas especially along the beach and in estuaries; again the proposed OGRs maintain components of flora and fauna biodiversity and ecological processes associated with old-growth forests by containing the minimum total acres as well as POG acres and areas of rare features such as large tree POG; and the proposed OGRs will allow existing natural or previously harvested early seral conifer stands to evolve naturally to old-growth forest habitats, or apply silvicultural treatments that accelerate forest succession to achieve old-growth forest structural features. The proposed OGRs also generally reduce the amount of road included in the OGR.

Due to the considerable overstory that will remain in the 50 and 75 percent retention areas, the brushy stage of stand development seen after even-aged harvesting will generally not occur. The stem exclusion stage is not expected to occur to the same magnitude seen in even-age stands either. Review of the single tree selection harvest completed under the Logjam ROD supports this assumption (see STS Review files in project record).

After harvest in the 50 percent retention units, the stands will continue to develop and should regain old-growth characteristics quickly. As noted above, 75 percent retention units are expected to maintain old-growth structure.

I considered the wildlife Forest Plan Standards and Guidelines, and legacy forest structure (see the Introduction to Unit Cards in Appendix 1 for an explanation of legacy forest structure) is incorporated into harvest units greater than 20 acres in VCUs 5790, 5810, 5830, 5840, 5850, 5860, and 5972. Legacy shown on the unit card maps may be modified slightly to best meet objectives during layout. The planned purpose of the legacy and the amount of legacy needed for the planned acres is discussed in the unit card text. Any changes in the planned location of the legacy will be considered during the change analysis process.

The analysis disclosed the effects of climate change on the project and the project on climate change, including the near-term effects of the action alternatives and I weighed those effects among the other resource considerations. The FEIS identified the difficulties in assessing those affects at the project scale, largely due to the level of uncertainty. The Forest Plan outlines the considerable uncertainty concerning specific predictions of how the climate may change, and even more uncertainty regarding the effects of climate change on the resources of the Tongass National Forest. The Tongass National Forest will continue to monitor potential effects of climate change through the existing Forest Plan monitoring programs, and other studies that are happening regionally and nationally. Any need for a different course of action that might affect this decision will be addressed through existing procedures to determine whether changes are warranted

The Selected Alternative does not include any harvest units or road building within the Inventoried Roadless Areas as described by the 2001 Roadless Rule.

EFFECTS OF THE SELECTED ALTERNATIVE ON SIGNIFICANT ISSUES

Issue 1 – Timber Supply and Timber Sale Economics

The amount of timber available for sale from national forests and a stable supply affects local employment and revenues. This issue concerns both the financial efficiency and the salability of the project. It also relates to the potential support to local employment and revenues generated for communities in the local area. Project design affects the viability of sales and the ability to offer them. Optimizing volume and net return on timber harvest will provide for flexibility over the life of the project and the ability to offer economically viable timber sales across fluctuating market conditions. It is also critical to match the range in the size of sales offered to the range in sizes of industry operators. Operators need economical timber to stay in business and loss of those operators would have an adverse impact on local economies.

The Selected Alternative responds to this issue by providing 148.9 MMBF for harvest. Once cleared by this decision, units from the Selected Alternative may be packaged and sold to a variety of different operators locally, throughout Southeast Alaska, and beyond, depending the market and demand at the time of purchase.

All helicopter harvest will be modified as follows: harvest retention will be 50 percent except for wind prone units. Units that are in wind prone area will have retention of 75

percent. The modification to helicopter units from even-age management to uneven-aged management will improve economics and be less detrimental to wildlife habitat and may reduce the amount of firewood available to the public by having less utility volume hauled to landings.

Issue 2 – Old-Growth Habitat LUD Modifications

Two alternatives in the Big Thorne FEIS were developed and are evaluated that include modifications to Old-Growth Habitat LUD (OGR's) modifications as a result of the Tongass no longer being exempt from the 2001 Roadless Rule. In Alternatives 3, changes were made to the OGRs to expand the suitable timber base on the roaded land base portions of the OGRs. In Alternative 4, changes were made to modify the reserves for the biologically preferred locations. Both sets of modifications may affect the amount and quality of wildlife habitat protected by the small OGRs, the amount and quality of suitable timber available in the project area, and the effects to other resources including fisheries, sensitive plants, scenery, and recreation. All modifications are limited to the small OGRs; no changes were proposed to medium or large OGRs.

According to the Forest Plan Management Prescriptions for Old Growth Habitat LUD Standards and Guidelines (FP 3-62 WILD1 B.2), "Alternative reserves must provide comparable achievement of Old-growth Habitat LUD goals and objectives. Determination as to comparability must consider the criteria listed in Appendix K." In addition to providing direction for when a Project-Level Review is required and how to conduct such a review; Appendix K criteria for Small OGR's requires a review of Appendix D of the 2008 Forest Plan Final EIS (USDA Forest Service 2008b).

Following this direction, I have determined that the 11 alternative reserves listed in the Selected Alternative comply with the Forest Plan standard, including that each provides a comparable achievement of the Old Growth Habitat LUD goals and objectives (Forest Plan, p. 3-57). I have followed the direction for project-level review as directed in Appendix K, and in doing so, considered the OGR criteria contained in Appendix K of the Forest Plan and Appendix D of the Forest Plan FEIS. As part of this review process, I considered the biologically preferred alternative (Alt 4) provided and discussed by the Interagency Review Team on June 2-3, 2011 and April 8, 2013. The "Interagency Old Growth Reserve Review Big Thorne Project" document dated April, 2013 documents the biologically preferred location for the OGRs as well as alternate locations.

For three (3) of the eleven (11) alternative reserves (VCUs 5800, 5810 and 5850) I am aware that site specific conditions of the alternative reserve implemented by this decision will not provide physical conditions of kind and like quality to the existing condition of these small OGR's as currently defined by the Forest Plan ROD, 2008. In these 3 alternative reserves, the primary concerns are over elevational connectivity and the size of POG patches remaining in these Small Old Growth Reserves after changes are made. Despite changes in some important landscape features, their overall condition still meets the Forest Plan and satisfies the Conservation Strategy by meeting the criteria of Appendix K of the Forest Plan and Appendix D of the Forest Plan FEIS by maintaining important old growth habitat functions on the ground while providing increased capacity for harvest in an actively managed landscape. The importance of these changes is commensurate with the importance of this alternatives ability to provide a robust and

stable supply of timber upon which the transition of the existing timber industry from old growth to young growth is expected. These three alternative reserves also minimize road density of the OGR; an important feature for wolves as discussed in the FEIS.

Analysis of each VCU is further provided in Appendix 3 of the ROD and a comparison of the criteria considered is listed in Table OGR-2 of the FEIS.

I have considered the effect of all 11 alternative reservations and specifically the three with which there are resource concerns. I have compared the landscape features between the existing condition and the alternative reserves at the scale of the VCU, and relative to the Purpose and Need of the project and have further considered the role of each of these OGR's in the Forest Plan Conservation Strategy. I feel these effects and the process followed is a reasoned decision with very limited risk to old growth dependent species in the project area.

VCU 5810

This VCU contains two separate, non-contiguous OGRs. The Forest Plan (Appendix K p. K-3) states that for very large, large and medium VCUs, generally larger than 10,000 acres, the allocated old growth may be mapped in separate reserves as long as each reserve has a minimum of 800 acres of productive old growth. However, larger contiguous reserves are preferred to multiple smaller reserves.

Selected Alternative: The north OGR contains about 1,560 acres of old growth habitat and about 608 acres of that is POG.

The mapped reserve in the northern portion (1,560 acres) of this VCU includes 3 harvest units north of Forest Road 3030 road, units 469, 470, and 471. Although on the surface this appears to be inconsistent with the Forest Plan, legacy acres and stream buffers among these units and extending to the existing OGR maintain some elevation travel corridors for wildlife.

In addition, the Selected Alternative makes no changes to the south OGR which contains 2,188 acres of old growth habitat and 1,421 acres of POG, which will continue to meet the goals and objectives of the Old Growth Habitat LUD and fulfill habitat conservation and timber harvest objectives.

Refer to Table OGR-2 of the FEIS for a detailed comparison of values changing between the existing OGR and the Modified OGR to be implemented with the Selected Alternative.

VCU 5820

Selected Alternative: Retains the biologically preferred (IRT Recommended location) and re-organizes the accounting of acres within the VCU resulting in net change of acres or conservation measures. The decision reassigns acres that are currently mapped as part of the reserve in this VCU; but are presently accounted for as reserve acres in VCU 5830. Those acres will now be counted as reserved acres in this VCU (5820 resulting in a net increase of 386 acres of OGR.

VCU 5830

Selected Alternative: All of the old growth harvest units that were in this OGR previously displayed in the DEIS have been dropped. However, the boundary of this OGR has been modified as a result of reassigning acres that were a part of this OGR (in VCU 5830) but in VCU 5820 to the OGR in VCU 5820. Acres have been added to the OGR to meet minimum total acres and POG acre requirements. The proposed modifications will enhance wildlife habitat near Trumpeter Lake by improving forage availability and removing the stand for the stem exclusion phase for the duration of rotation.

VCU 5840

Selected Alternative: Maintains 2008 Forest Plan OGR which is also biologically preferred OGR.

VCU 5850

Selected Alternative: The Selected Alternative drops all units in the modified OGR except one, thus maintaining most of the high value, low elevation stands, and most of the remaining blocks of contiguous low elevation POG in this VCU. One of the larger blocks of POG remaining in the VCU is not included in the current, biologically preferred OGR.

The one remaining harvest unit carried forward in the Selected Alternative is located on the west side of the Sandy Beach road. Harvest of the unit will result in a reduction of POG acres currently protected by the OGR. The coastline to the east of the road; the uneven age harvest of the partial unit; the limited size of the planned even-age opening in relationship to surrounding lands; and the ability of this VCU to meet the minimum requirements of Appendix K in the Forest Plan allows for the remaining old growth stands to provide the majority of conservation benefits in this modified reserve, while providing increased opportunity for timber management in a heavily managed and roaded landscape upon which timber management is being increasingly focused.

VCU 5860

Selected Alternative: Maintains currently mapped and biologically preferred OGR that meets the goals and objectives of the Old Growth Habitat LUD.

VCU 5800

Selected Alternative: The Selected Alternative drops all of the units in the flatter valley bottom of this OGR, thus maintaining the purpose and rationale of maintaining OGR protection of the wildlife migration corridor through a low elevation river drainage that connects the Honker Large OGR to the coastline through the current Small OGRs in VCUs 5800 and 5840 and important winter habitat in the valley bottom. Additionally, the modified OGR maintains and protects more acres of POG than the current delineated OGR.

There are two units in the modified OGR which will be harvesting using mostly single tree selection (both 50 percent retention and 75 percent retention); part of one unit is proposed for clearcut harvest. The net result is that clearcutting unit 440 will likely result in the loss of the elevation corridor in this area; however, partial harvest of unit 444 will likely maintain this elevational corridor to some extent. Given the mitigating factors associated with the partial harvest prescription of unit 444; the net increase in acres of Old Growth acres associated with the OGR in this VCU; the increase in Large Tree POG and the balance of all additions and deletions of other conservation functions in this landscape (See Table OGR-2); this modified OGR will still maintain the goals and objectives of the Old Growth Habitat LUD.

VCU 5790

Selected Alternative: Moves 5 acres of OGR to harvest in unit 83. The Selected Alternative does not remove the westernmost block of POG (identified as a key element for connectivity in this area and one that the OGR was designed to protect) from the OGR. The modified OGR exceeds the minimum acre requirements from Appendix K, will continue to meet the goals and objectives of the Forest Plan Old Growth Habitat LUD and provides for increased harvest opportunities within the roaded landbase where the timber activities have recently been concentrated.

VCU 5950

Selected Alternative: The Selected Alternative retains all harvest units within the modified OGR proposed in the FEIS. The net result is a further severing connection to the Honker complex to the north that is already severed by the State land selection in this area. While the Selected Alternative does not physically provide a comparable achievement between the proposed change and existing condition it does add high elevation acres on the west side of the VCU and thus provides a comparable achievement and meets the goals and objectives of the Old Growth Habitat LUD.

VCU 5960

VCU 5960 contains both large and small OGR acres. The Small OGR includes the area south of the paved highway and east of Control Lake. The rest of the OGR acres in this VCU are part of the Honker Large OGR complex.

Selected Alternative: Maintains currently mapped OGR thus providing a comparable achievement and meet the goals and objectives of the Old Growth Habitat LUD.

VCU 5972

Selected Alternative: Maintains currently mapped OGR thus providing a comparable achievement and meet the goals and objectives of the Old Growth Habitat LUD.

The following table shows the changes by VCU from Alternative 3 for the Selected Alternative in the ROD.

Table ROD-4. Change To Harvest Units in OGRs

VCU	Units Dropped from Alternative 3	Units remaining
5810	464, 465, 466, 473,475,476, south piece 470	469, 470 and 471
5820	461*, 463, 212, 213	None
5830	460, 461*	560 and 561
5840	452, 454, 455, 456, 457	None
5850	435	438
5860	426,427,428,429,430,431,433,434	None
5800	439, 446, 448, 450, 447**	440 and 444
5790	424	83 (small piece)
5972	413, 414,419,420,421,422,423	None
5950	None	401, 402, 403, 404, 405, and 407
5960	No change to OGR	N/A

*461 in in VCUs 5820 and 5830;
** half of the unit in the OGR is dropped, and the other half in TM LUD will be kept.

The modification of the Old-growth Habitat LUDs also impacts the amount of protection provided to rare and sensitive plants. The following table shows the changes in populations and individuals for the two plant species affected by the modifications.

Table ROD-5. Rare and Sensitive Plants within Old-Growth Reserves

	Alternative 3		Selected Alternative	
Type Affected	Lesser Round-Leaved Orchid	Whiteflower Rein Orchid	Lesser Round-Leaved Orchid	Whiteflower Rein Orchid
Populations within OGRs	23	9	22	12
Estimated Percentage of Known Populations within OGRs in the Project Area[2/]	19%	30%	18%	40%
Individuals within OGRs in the Project Area[3/]	764	580	1045	673
Estimated Percentage of Known Individuals within OGRs in the Project Area[4/]	19%	44%	26%	51%

In addition, due to the modifications to the Selected Alternative from Alternative 3, there is a decrease in the project activities and effects to lesser round-leaved orchid, a sensitive plant. This is a decrease in the number of direct and indirect effects to both populations and individuals. Similar to all action alternatives analyzed for this project the Selected

Alternative may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing. The following table (Table ROD-7) shows the anticipated effects to populations and individuals.

Table ROD-6. Direct and Indirect[1/] Effects to Lesser Round-Leaved Orchid

Type Affected	Alternative 3		Selected Alternative	
	Direct Effects	Indirect Effects	Direct Effects	Indirect Effects
Populations Affected	31	23	30	20
Estimated Percentage of Known Populations Potentially Affected in Project Area[2/]	26%	23%	25%	17%
Individuals Affected[3/]	276	622	235	381
Estimated Percentage of Known Individuals Potentially Affected in Project Area[4/]	7%	16%	6%	9%

1/ Populations potentially indirectly affected in the table include only those in addition to the ones directly affected to avoid double counting
2/ There are 120 known populations in the project area.
3/ Number of individuals estimated by multiplying the number of individuals identified in a population by the proportion of that population area within the direct or indirect effect zone (see Methods Section in the FEIS).
4/ There are approximately 4,019 known individuals in the project area.

Issue 3 – Wildlife Habitat and Subsistence Use

Public and agency comments expressed concerns about wildlife and subsistence use in the project area. Concern was noted relative to deer, wolf, goshawk, black bear, marten, and other species. Of special concern are project effects on deer because of their importance to wolves and subsistence users. Because of its proximity to residents of Thorne Bay, Coffman Cove, Klawock, Craig, and Naukati, the Big Thorne project area is considered an important deer hunting area for these communities. The cumulative effects on old-growth habitat associated with additional harvest combined with past harvest and increasing road density were noted concerns.

The Big Thorne EIS tiers to the analysis of cumulative effects at the Forest scale in the 2008 Forest Plan Final EIS (USDA Forest Service 2008c). This analysis fully considered the levels of past and likely future harvest and associated development on NFS and non-NFS lands, accounting for projects such as Big Thorne. The 2008 Forest Plan Final EIS concluded that with full implementation of the Forest Plan, extensive areas in reserves, distributed across the North Central Prince of Wales biogeographic province, would be maintained through the conservation strategy (USDA Forest Service 2008c). No gaps in the distribution of organisms within the province were anticipated (USDA Forest Service 2008c) however this determination was made with the existing OGRs. No IRT determination has been done for the Selected Alternative therefore under the Selected Alternative gaps in distribution may occur. The movement capabilities of organisms with low mobility may be limited, potentially resulting in gaps in distribution and a reduced likelihood of local population persistence. The Big Thorne EIS tiers to the viability

assessments for goshawks, marten, wolves, other terrestrial mammals (well-distributed mammals and endemic mammals), and marbled murrelets; and the analysis of cumulative effects at the Forest scale in the 2008 Forest Plan Final EIS (USDA Forest Service 2008c). These analyses fully considered the levels of past and likely future harvest and associated development on NFS and non-NFS lands, accounting for projects such as Big Thorne. The 2008 Final EIS concluded that full implementation of the Forest Plan (in 100+ years) is expected to have a moderate to very high likelihood of maintaining habitat that supports viable and well-distributed populations of wildlife (USDA Forest Service 2008c).

BIODIVERSITY

The North Central Prince of Wales Island biogeographic province historically contained more POG than any other biogeographic province on the Tongass (Forest Plan 2008b). It has also experienced the highest amount of harvest relative to other biogeographic provinces, with 70 percent of the total original (1954) POG on all ownerships remaining, ranging from 40 to 100 percent by VCU (Table WLD-1 of the FEIS). There are approximately 569,005 acres of POG currently within the North Central Prince of Wales biogeographic province (Table WLD-1 of the FEIS).

Low elevation, larger-tree stands have been disproportionately harvested on the Tongass because these highly productive and economical sites (i.e., those easiest to access) were targeted in the early years of commercial timber harvest (USDA Forest Service 2008b). Within the North Central Prince of Wales biogeographic province, approximately 62 percent of the original high-volume POG (ranging from 18 to 100 percent by VCU) and 63 percent of the original large-tree POG (ranging from 13 to 100 percent by VCU) on all ownerships remain (Table WLD-1 of the FEIS). The North Central Prince of Wales biogeographic province currently includes over 10 and 20 percent of all the remaining high-volume and large-tree POG on the Tongass, respectively (USDA Forest Service 2008b). Based on the definition of an intact landscape used in the 2008 Forest Plan Final EIS, (a VCU with at least 95 percent of the original POG remaining), three project area VCUs (5750, 5820, and 5960) are intact, and thus likely to maintain a high degree of biodiversity. Although landscapes with higher amounts of past harvest likely remain fully functional, this threshold represents an index used to identify areas that are in relatively pristine conditions and thus have the highest biological importance.

The Selected Alternative will reduce POG by 5,996 acres in the project area (for a total reduction of 38 percent of the 1954 amount). Uneven-aged management (50 to 75 percent retention) has been prescribed in many units in order to maintain structural diversity and for other reasons. By retaining a large percentage of the stand, connectivity will be maintained in these units. Although volume class will change, these prescriptions are not expected to take stands out of a POG classification. Where 75 percent retention is prescribed, it is expected that the structural change post-harvest will be only minor and the stand will remain in the old-growth structural stage after harvest and into the future.

The patch size classes presented in Table WLD-2 (in the FEIS) represent fragmentation at multiple scales. Patches at the sub-stand and stand levels (i.e., the smallest size classes) represent scales of influence important to organisms such as lichens, fungi, plants, invertebrates, and small bodied mammals which may be locally endemic; occur in very specific forest structure or soil conditions; or have limited dispersal capabilities. Larger

patches represent scales of influence important to wider-ranging species such as deer, marten, and forest-dwelling birds of prey.

Conclusion

The Selected Alternative will reduce the amount of POG on the landscape. The Selected Alternative results in a 6 percent reduction in POG in the project area from the current amount and a 38 percent reduction from 1954. At the Biogeographic province scale the Selected Alternative results in a 1 percent reduction from current POG acres and a 49 percent reduction from 1954. The Selected Alternative results in a 7 percent reduction in HPOG in the project area from the current amount and a 47 percent reduction from 1954. At the Biogeographic province scale the Selected Alternative results in a 1 percent in reduction from current HPOG acres and a 59 percent reduction from 1954. The Selected Alternative results in a 7 percent reduction in large tree POG in the project area from the current amount and a 45 percent reduction from 1954. At the Biogeographic province scale the Selected Alternative results in a 1 percent in reduction from current large tree POG acres and a 57 percent reduction from 1954.

Effects of POG harvest are expected to be less under uneven-aged management which leaves a substantial portion of the trees standing in a unit. The Selected Alternative proposes less even-aged management than was proposed in Alternatives 2 and 3, so the effects from even-aged management will be less for the Selected Alternative.

The Selected Alternative will increase fragmentation by increasing the number of patches in the small size class and reducing interior forest acres. The number of patches in the smallest patch size class (0-25 acres) will increase from 308 (current) to 926 (after implementation), similar to Alternative 3. The changes in all other patch size classes in the Selected Alternative are very similar in all other alternatives.

Species with limited dispersal capabilities (i.e., flying squirrel) appear to be more sensitive to habitat loss and fragmentation than species with greater dispersal capabilities (i.e., goshawks; D'eon et al. 2002).

The Big Thorne project will increase the number of VCUs where cumulative harvest is greater than 33 percent of the original total POG. In these VCUs, additional habitat loss and fragmentation could locally hinder the mobility of species with low dispersal capabilities (e.g., Prince of Wales flying squirrel).

Of the three intact VCUs, all would remain intact after implementation of the Selected Alternative.

FRAGMENTATION/CONNECTIVITY/CORRIDORS

During public scoping and based on local knowledge of the project area, some locales were identified as having past harvest and future alterations which could reduce natural connectivity and limit the ability of land-based species to disperse or migrate (Figure WLD-1 in the FEIS). (Note that these areas are identified in Figure WLD-1 as "probable" movement corridors, and were identified based on characteristics listed in wildlife standard and guideline WILD1.VI.A.2 Landscape Connectivity [USDA Forest Service 2008a] including a visual assessment of remaining blocks of POG on the landscape.)

Effects to biodiversity are expected to be lessened using uneven-aged harvest; which leave some portion of the trees standing in a unit thereby maintaining some habitat suitability

and connectivity. Young-growth management could increase biodiversity in previously harvested stands. This should increase habitat suitability for old-growth associated species and improve landscape connectivity over the long-term.

Indirectly, timber harvest and associated activities fragment and reduce the quality of remaining habitats. Edge effects such as changes in vegetation structure, plant and wildlife species composition, predation rates, and disturbance may occur, with some effects extending up to 1,640 feet (500 meters) from the forest edge (see the Biodiversity affected environment discussion for additional detail). Fragmentation may remove linkages between habitat patches, making it harder for some wildlife to move across the landscape. A continuously distributed population could become a series of small, subpopulations that rely on the ability of dispersing individuals of genetic interchange and recolonization in the event of local extirpation. Remaining habitat patches may become smaller and less suitable for species associated with interior forest conditions. It can be assumed that the alternatives that harvest the most POG and result in the greatest increases in the number of POG patches on the landscape will result in the greatest edge effects and have the greatest adverse effects to biodiversity.

Assuming the minimum travel distance for marten of 8 miles (13 km) reported by Flynn (1991 as cited in Flynn and Schumacher 2001) and that corridors through POG are optimal, small OGR modifications under the Selected Alternative will slightly reduce functional connectivity by slightly reducing the width of the OGR in VCU 5800 which provides connectivity between the Honker large OGR and the OGR in VCU 5840 to saltwater; and between the north small OGR in VCU 5810 and the small OGR in VCU 5720; modification to the OGR in VCU 5950 will reduce the connectivity due to harvest units; OGR modifications in other VCUs will maintain the existing level of connectivity. The OGR modifications in the Selected Alternative will result in reducing the suitability of these areas for marten travel corridors.

Based on the maximum reserve spacing suggested by Smith et al. (2011) of 0.6 mile (1 km) for flying squirrels, the small OGR modifications under the Selected Alternative may slightly reduce functional connectivity among reserves in some VCUs. But it is likely to continue facilitating back-and-forth exchange between source populations in larger reserves and small OGRs.

Conclusion

The Selected Alternative will result in timber harvest in the vicinity of the areas identified as being important as travel corridors and areas important to connectivity. It will not affect the corridors in the Cutthroat drainage, Control Creek drainage, and the tributary to the North Thorne River near Thorne Lake, all of which are corridors associated with the Honker Divide, or in the Rio Roberts drainage. Uneven-aged prescriptions would maintain more forest structure within harvested stands and therefore is assumed to maintain the functioning of the corridor more than even-aged harvest. The Selected Alternative clear cut harvests fewer acres than what was proposed in Alternatives 2 and 3; single tree selection more acres than Alternatives 2 and 3 and add more helicopter single tree selection acres than Alternatives 2 and 3.

The Selected Alternative will result in timber harvest within potential corridors, and the small OGR modifications under the Selected Alternative will reduce connectivity. The

Selected Alternative will reduce connectivity along Luck Lake/Eagle, Ratz Harbor, Sal Creek, Clarence Strait Shoreline, Rio Beaver, Steelhead, and Rush Peak. This reduced connectivity may affect species such as the marten and flying squirrel.

The Forest Plan conservation strategy would continue to provide for extensive areas in reserves distributed across the province. In addition, within matrix lands the implementation of the Legacy Forest Structure and Riparian standards and guidelines, as well as the beach and estuary fringe, would maintain some travel ways, corridors, and connectivity.

WILDLIFE

Management Indicator Species (MIS) are species whose response to land management activities can be used to predict the likely response of other species with similar habitat requirements (Forest Service Manual [FSM] 2631.3). In accordance with the 1982 Planning Regulations, 13 wildlife species were identified as MIS in the Forest Plan (USDA Forest Service 2008a). Of these, three wildlife species (brown bear, mountain goat, and red squirrel) do not occur in the project area. The Sitka Black-tailed deer and Alexander Archipelago wolf are summarized here.

DEER

Forest Plan standards and guidelines require the use of the most recent version of the interagency deer habitat capability model to assess impacts to deer habitat (WILD4.XIV.A.2; USDA Forest Service 2008a). The deer model takes into account snow depth (indicative of typical, moderate winter severity), elevation, aspect, and forest vegetation to provide a habitat suitability index (HSI) of habitat capability. High model scores represent features that are correlated with high value deer habitat. These features include closed canopy (based on volume class rather than canopy cover), low elevation south facing slopes, and average snow depth. Habitat capability values are used in this analysis to estimate changes that result from timber harvest, but do not reflect actual deer numbers.

To compare alternatives, changes in habitat capability are presented in terms of units (deer habitat capability units or deer per square mile) and as a percent. Results from this modeling exercise are also used to evaluate impacts to wolves and subsistence resources. The Forest Service recently issued direction on the use of the deer model including required analyses and model assumptions for wolves and subsistence (USDA Forest Service 2011b).

Forest Plan standards and guidelines require, where possible, the provision of sufficient deer habitat capability to first maintain sustainable wolf populations, and then to consider meeting estimated human deer harvest demands. This is generally considered to equate to the habitat capability to support a minimum of 18 deer per square mile (using habitat capability model outputs; USDA Forest Service 2008a). However, other factors (e.g., local knowledge of habitat conditions) are to be considered by the biologist, as well, rather than solely relying upon model outputs.

Currently none of the project area WAAs supports 18 deer per square mile (FEIS Table WLD-5). This suggests that, based on modeled deer densities alone, the project area WAAs may not be capable of sustaining wolves without immigration from neighboring areas (see the Deer subsection in the FEIS for information on deer population trends

within GMU 2). However, this does not take into account the fact that wolves are highly mobile and move between WAAs and thus wolf packs may be supported by a number of adjacent WAAs (Person and Logan 2012); the potential benefits of young-growth management for deer habitat and road management for controlling hunter access; or the presence of the Honker Divide Large OGR complex (200,000+ acres) and the Karta Wilderness (about 40,000 acres) both adjacent to the project area. For example, wolves occupying the Honker Divide OGR also use areas of North and East Thorne River that are within the project area (Person 2001).

Conclusion

Over the long-term, reductions in habitat capability could reduce carrying capacity, or the numbers of deer an area is capable of supporting given the available resources. This could lead to a decline in the deer population, particularly following severe winters, if the demand for resources (e.g., food or habitat) exceeds that which is available. Uneven-aged would lessen reductions in habitat capabilities as both some cover and forage would be maintained in harvested stands. The Selected Alternative clear cut harvests fewer acres than what was proposed in Alternatives 2 and 3; single-tree-selection harvests more acres than Alternatives 2 and 3, and harvests more helicopter single-tree selection acres than Alternatives 2 and 3.

Likewise, reductions in deer habitat capability over the long-term may reduce the access to and availability of deer to subsistence hunters.

Cumulative past harvest activities have reduced deer habitat capability to between 55 and 92 percent of the estimated capability in these WAAs in 1954 (FEIS Table WLD-21). Additional harvest on NFS and other lands would further reduce deer habitat capability.

Deer habitat capability would be reduced under all alternatives. Deep snow winter, average snow winter, and non-winter habitat would also be reduced under all action alternatives. Commercial thinning treatment would mitigate to some extent the effects of timber harvest by improving deer habitat.

Small OGR modifications under the Selected Alternative would also reduce inclusion of deer winter habitat and low-elevation POG (indicative of higher value habitat) in the reserve system.

Reductions in habitat capability in combination with periodic severe winters may result in a local decline in the deer population, particularly given recent declines observed on Prince of Wales Island, which could limit the number of deer available to wolves and hunters. The 2008 Forest Plan Final EIS (USDA Forest Service 2008c) predicts that with full implementation of the Forest Plan, WAAs 1315, 1318, 1319, and 1420 will retain 47, 75, 64, and 40 percent of the historic (1954) habitat capability in 100+ years, respectively, on NFS lands. Predictions including non-NFS lands would likely be lower (USDA Forest Service 2008c). Regardless of the alternative chosen for the Big Thorne Project, management activities would retain habitat capability (taking only NFS lands into account) above these predicted levels in all WAAs at project completion and at stem exclusion (FEIS Table WLD-19).

In response to the comments to help maintain wolf sustainability, I have conferred with a group of interagency wildlife biologists. This group recommended that treating older past

harvest areas near subsistence communities would have the most benefit. Several of the areas recommended by this group are already included in the Big Thorne EIS.

WOLVES

Deer

Effects to wolves from reductions in deer habitat capability would occur under all alternatives (Table ROD -7 and ROD -8*). None of the project area WAAs alone provides a habitat capability of 18 deer per square mile, generally considered under the Forest Plan to be sufficient to maintain sustainable wolf populations and taking into account hunting. Additional, project-related effects to deer habitat capability under the action alternatives, and reductions due to forest succession in previously harvested stands, have the potential to reduce the prey base for wolves. Accordingly, there will be some reduction in the ability of project area WAAs to maintain a sustainable wolf population, based on deer habitat capability alone.

Table ROD-7. Effects of Timber Harvest on Deer Density by WAA (NFS Lands Only)

WAA	Year	Density or %	Existing Condition	Alt. 1	ROD
1315	1954	deer/mi^2	28.3	--	28.3
	2013	deer/mi^2	16.7	--	16.7
		% of 1954	59%	--	
	2014 after Implementation	deer/mi^2	--	16.6	15.9
		% reduction from 2013	--	0%	96%
		% of 1954		59%	56%
	2040 at Stem Exclusion	deer/mi^2	--	15.5	14.8
		% reduction from 2013	--	-7%	95%
		% of 1954	--	55%	52%
1318	1954	deer/mi^2	14.7	--	14.7
	2013	deer/mi^2	13.6	--	13.6
		% of 1954	92%	--	92%
	2014 after Implementation	deer/mi^2	--	13.5	12.9
		% reduction from 2013	--	0%	-5%
		% of 1954	--	92%	88%
	2040 at Stem Exclusion	deer/mi^2	--	12.9	12.3
		% reduction from 2013	--	-5%	-9%
		% of 1954	--	88%	84%
1319	1954	deer/mi^2	20.9	--	20.9
	2013	deer/mi^2	16.0	--	16.0
		% of 1954	76%	--	76%
	2014 after Implementation	deer/mi^2	--	15.9	15.0
		% reduction from 2013	--	-1%	-6%
		% of 1954		76%	72%
	2040 at Stem Exclusion	deer/mi^2	--	15.3	14.4
		% reduction from 2013	--	-4%	-10%
		% of 1954	--	73%	69%
1420	1954	deer/mi^2	21.5	--	21.5
	2013	deer/mi^2	11.8	--	11.8
		% of 1954	55%	--	55%
	2014 after Implementation	deer/mi^2	--	11.8	11.1
	2014 after Implementation	% reduction from 2013	--	0%	94%
		% of 1954	--	55%	52%
	2040 at Stem Exclusion	deer/mi^2	--	10.5	9.9
		% reduction from 2013	--	-11%	-16%
		% of 1954	--	49%	46%
North Central Prince of Wales Biogeographic Province (all WAAs)	1954	deer/mi^2	24.28	--	24.28
	2013	deer/mi^2	17.95	--	17.95
		% of 1954	59%	--	59%
	2014 after Implementation	deer/mi^2	--	17.89	17.73
		% reduction from 2013	--	-1%	-1%
		% of 1954	--	74%	73%
	2040 at Stem Exclusion	deer/mi^2	--	17.36	17.23
		% reduction from 2013	--	-4%	-4%
		% of 1954	--	72%	71%

Table ROD -8. Cumulative Impacts to Deer Habitat Capability by WAA (All Lands)

WAA	Year	Density or % of 1954	Existing	Alt. 1	ROD
1315	1954	deer/mi^2	15.9	--	15.9
	2013	deer/mi^2	9.4	--	9.4
		% of 1954	59%	--	59%
	2014 after Implementation	deer/mi^2	--	9.4	8.9
		% of 1954	--	59%	56%
	2040 at Stem Exclusion	deer/mi^2	--	8.8	8.3
		% of 1954	--	55%	52%
1318	1954	deer/mi^2	6.6	--	6.6
	2013	deer/mi^2	6.1	--	6.1
		% of 1954	92%	--	92%
	2014 after Implementation	deer/mi^2	--	6.1	5.8
		% of 1954	--	92%	88%
	2040 at Stem Exclusion	deer/mi^2	--	5.8	5.5
		% of 1954	--	88%	84%
1319	1954	deer/mi^2	20.7	--	20.7
	2013	deer/mi^2	15,8	--	15,8
		% of 1954	76%	--	76%
	2014 after Implementation	deer/mi^2	--	15.7	14.9
		% of 1954	--	76%	95%
	2040 at Stem Exclusion	deer/mi^2	--	15.1	14.3
		% of 1954	--	73%	95%
1420	1954	deer/mi^2	19.4	--	19.4
	2013	deer/mi^2	10.5	--	10.5
		% of 1954	54%	--	54%
1420 (cont.)	2014 after Implementation	deer/mi2	--	10.5	9.9
		% of 1954	--	54%	51%
	2040 at Stem Exclusion	deer/mi2	--	9.2	8.6
		% of 1954	--	48%	XX
North Central Prince of Wales Biogeographic Province (all WAAs)	1954	deer/mi2	19.8	--	19.8
	2013	deer/mi2	14.6	--	14.6
		% of 1954	74%	--	74%
	2014 after Implementation	deer/mi2	--	14.5	14.4
		% of 1954	--	74%	73%
	2040 at Stem Exclusion	deer/mi2	--	14.1	14.0
		% of 1954	--	71%	71%

Conclusion

The cumulative effects of the Selected Alternative associated with ongoing and future timber harvest on NFS and lands in other ownership result in an additional reduction of deer habitat capability. Collectively this has the potential to result in localized declines in the deer population, and thus the prey base for wolves. At project completion, none of the project area WAAs (all land ownerships included) would support 18 deer per square mile, though none of them do currently (FEIS Table WLD-26). Wolves are highly mobile within their territories and nearby WAAs with higher deer densities (e.g., WAAs 1323 and 1332) would continue to support wolves in the vicinity of the project.

The 2008 Forest Plan Final EIS (USDA Forest Service 2008c) predicts that with full implementation of the Forest Plan, WAAs 1315, 1318, 1319, and 1420 will retain 47, 75, 64, and 40 percent of the historic (1954) habitat capability in 100+ years, respectively, on NFS lands. Predictions including non-NFS lands would likely be lower (USDA Forest Service 2008c). With the Selected Alternative for the Big Thorne Project, habitat capability (taking only NFS lands into account) would be retained above these predicted levels in all WAAs at project completion and at stem exclusion (FEIS Table WLD-19).

Roads

All action alternatives involve the construction of roads and will result in an increase in road density. While the roads associated with timber harvest may increase the risk of hunting and trapping related wolf mortality by increasing human access they should be examined in the context of the existing road system. New roads constructed in drainages with an extensive system of existing roads would be expected to have less of an increase on harvest-related mortality risk than new roads entering undisturbed areas which may provide new points of access for hunters and trappers. All proposed roads under the Big Thorne Project consist mainly of short segments with none of the roads accessing previously inaccessible areas. Such effects may be counteracted to some extent through additional road closures (Prince of Wales Island ATM); open roads would be expected to have a greater effect than roads that are closed (either through storage or decommissioning) following their use (Person and Russell 2008). However, Person and Logan (2012) modeled the effects of such closures and found them to have little influence on mortality risk.

Existing road densities in WAAs 1315, 1319, and 1420 exceed the 1.5 mile per square mile (0.9 km per square km) threshold suggested by Person and Russell beyond which they found road density to have little additional effect on harvest rates. However, the Forest Service acknowledges that concern over wolf mortality rates still exists where road densities are at or above 1.5 miles per square mile. Harvest rates would potentially increase in WAA 1318 because current total road densities are below this threshold; however, increases under all alternatives would be 0.2 mile per square mile or less (FEIS Table WLD-25). The effects of roads on wolf mortality risk may be exacerbated in WAAs that have beach access (WAAs 1420 and 1315) used by hunters and trappers.

As a result of the road building associated with the Selected Alternative, the road density under 1,200 feet in elevation will increase (see Table ROD-4). The construction of roads will increase human access in the project area which may lead to an increased harvest of wolves. All temporary roads will be closed or decommissioned once timber harvest is complete. Most system roads (that are designated to be stored) will remain open for three to five years after the timber contract closes to allow for potential salvage and micro sales opportunities and subsistence opportunities. Public access will be allowed on these systems roads until they are stored.

Conclusion

None of the project area WAAs alone provides a habitat capability of 18 deer per square mile, generally considered under the Forest Plan to be sufficient to maintain sustainable wolf populations and taking into account hunting. Additional, project-related effects to deer habitat capability under the action alternatives, and reductions due to forest

succession in previously harvested stands, have the potential to reduce the prey base for wolves. Accordingly, there will be some reduction in the ability of project area WAAs to maintain a sustainable wolf population, based on deer habitat capability alone. However, the Forest Plan standard and guideline was intended to apply at a broader scale. At the scale of the biogeographic province, the cumulative effect of all alternatives would be the maintenance of approximately 13.9 to 14.0 deer per square mile 25 years after harvest (at stem exclusion). The effects presented here for all alternatives are within the range disclosed by the 2008 Forest Plan FEIS (USDA Forest Service 2008c), to which this analysis tiers. Thus, they are consistent with determinations made for subsistence and viability.

Some benefits to wolves in the project area would be provided indirectly (by improving habitat for deer) through young-growth management. With respect to road management affecting wolf sustainability, the number of road miles within the Big Thorne project area is so high that there is little that can be accomplished to reduce risk of wolf mortality by closing a small number of roads. However, closing or seasonally gating roads that penetrate or are immediately adjacent to the Honker OGR is the most immediate and locally beneficial measure. I have decided to seasonally close roads during wolf hunting and trapping season (December 1 to May 1). The roads will be open the rest of the year for public access. Some of these roads would have been left open under the Prince of Wales Access and Travel Management Plan but will now be seasonally closed.

Roads to be Seasonally Gated for Wolf Habitat include the following roads: 3030700, 3030750, 3035190, 3035050, 3030850, 3030860, 3030860, 3000348, 3000346, 3000347, and 3000340.

Although wolf population viability has a high likelihood of being maintained, concerns have been expressed on wolf sustainability. These concerns are at a more localized scale than the viability concerns. The Forest Service is working with other Federal and State agencies to address these concerns. The interagency group will continue to evaluate measures such as development of season and harvest limit proposals for submission to ADFG Board of Game and Federal Subsistence Boards; and development of a wolf habitat management program, including road access management in conjunction with ADFG. The Forest Service will continue to work with ADFG and USFWS as part of a technical working group to fill information gaps and evaluate potential conservation measures identified by the group that initially met October 2011.

Issue 4 – Cumulative Watershed Effects

Concern was expressed regarding the intensity of past harvest and road construction in the project area, and potential cumulative effects on watersheds and fish associated with additional harvest. The project area includes a number of streams with high fisheries value.

Cumulative effects of past and proposed harvest and existing and proposed roads in the Big Thorne project area may increase sedimentation and impact aquatic habitat. Past, present and future road construction, road maintenance, and road crossing construction all generate a level of disturbance and contribute sediment to project area streams.

The available data suggest that turbidity ranges in the affected subwatersheds are within ranges observed in unmanaged watersheds and subwatersheds and within the criteria established by the state.

Riparian harvest occurred in all of the affected subwatersheds, except in the Doughnut, Luck Point, and North Sal subwatersheds prior to 1991, even along fish streams. Past riparian harvest could have resulted in stream temperature increases during warm weather, but recovery of at least deciduous (alder) shade has likely occurred in these harvested riparian areas.

The lack of a predictive relationship between harvest and elevated stream temperatures on Prince of Wales Island, and implementation of riparian no-harvest buffers along Class I, II, and III streams for any future harvests, suggests that stream temperature is not likely to be measurably affected by harvest activities.

Effects on streamflow in the North Big Salt Lake, North Kasaan Bay Frontage, and North Sal subwatersheds could be moderate; but it is unlikely that streamflow increases would be measurable. The Big Thorne Project alternatives are unlikely to increase peak flows in any of the other subwatersheds. Although cumulative harvest may result in moderate streamflow increases, this assumes harvest of NEPA-cleared units, proposed state lands, and Big Thorne Project alternatives would occur in the same year. This assumption is not correct because this harvest is likely to occur over many years (the Big Thorne Project may occur over 10 years). Because of this timeframe, subwatershed canopy cover in mid-aged harvest areas (those near 30 years since last harvest) would approach normal canopy cover, reducing effects on streamflow. Total cumulative harvest (without Big Thorne harvest) would be less than 20 percent of the basin area by 2015 in all subwatersheds, except the North Kasaan Bay Frontage, Pin, and Thorne Bay subwatersheds, which would not be less than 20 percent of the basin area until 2024, 2041, and 2017, respectively. Therefore, it is unlikely that streamflow increases associated with cumulative harvest would be measurable in any subwatersheds except possibly the North Kasaan Bay Frontage, Pin, and Thorne Bay subwatersheds.

Rock sources will be examined for potential acid rock drainage (ARD) and questionable sources will not be used. In areas where full-bench construction is anticipated and the underlying bedrock (containing pyrite) may be mineralized, the Forest geologist will provide on-site inspection during excavation and construction to identify potential mineralized zones. If rock with potential for ARD is disturbed, mitigation will include lining the upslope ditch with limestone aggregate to neutralize run-off from potential mineralized zones exposed during full bench construction. See the discussion of Water Quality in Issue 4: Cumulative Watershed Effects in Chapter 3 of the FEIS for a more-detailed discussion.

In order to minimize any effects of harvest on stream flow in the North Big Salt Lake (Steelhead Creek) subwatershed, annual harvest levels will be limited to ensure that less than 20 percent of the subwatershed is in previously harvested areas that are 30 years old or younger at any point in time. To do this, harvest will be limited as follows:

- Up to 151 acres can be harvested in 2015 and no harvest is allowed prior to 2015;

- Up to 226 additional acres can be harvested in 2016 (plus any remainder from 2015);
- Up to 114 additional acres can be harvested in 2017 (plus any remainder from 2015 and 2016);
- Up to 171 additional acres can be harvested in 2018 (plus any remainder from 2015, 2016, and 2017);
- No limitation in 2019 or later.

All temporary roads will be closed or decommissioned once timber harvest is complete. Most system roads (that are designated to be stored) will remain open for one to five years after the timber contract closes to allow for potential salvage and micro sales opportunities. Public access will be allowed on these systems roads until they are stored. At the time of road storage all "red pipes" on the road will be pulled. See Table ROD-3 for a list of roads that will not remain open for one to five years and see the road cards for road specific information (if it will be open).

Errata

NFS Road 3023530 was washed out over the winter. This road accesses Units 167, 168, 169, 177, 555, 556, 557 and 558. Until further analysis is completed there is no access to these units.

NFS Road 3018125 is shown in the Unit Card maps as a proposed temporary road over decommissioned road bed accessing Unit 520. It is instead an existing system road. Due to a difference in databases there is no map for NFS Road 3018125, though there is the text road card.

NFS Road 3000140 is shown in the corporate database as a State of Alaska road, this is correct. NFS Road 3000140 was incorrectly shown as a Forest Service Road in the GIS layer that was used for the development of the alternative maps.

In June, an indication of a marbled murrelet nest was found in Unit 147. We are going to defer harvest in units 146 and 147 for the next two years to protect the marbled murrelet nest. A 600 foot buffer around the nest makes commercial logging infeasible. During the next two years we will monitor the nest for activity and the units may eventually be part of a small sale.

Other Environmental Consequences

All resources were evaluated for the effects of the Selected Alternative. Analyses of the effects on other resources for the Selected Alternative, including the cumulative effects with other projects, are summarized in the FEIS with additional information in the project record.

ALTERNATIVES CONSIDERED

Five alternatives were considered in detail in the EIS released for public comment. All alternatives, with the exception of Alternative 1, respond to the purpose and need. All action alternatives respond to the issues identified in varying degrees as discussed in the Big Thorne Project Final EIS.

The Final EIS analyzed the following alternatives in detail:

Alternative 1 - No Action

This alternative proposed no new Forest Service timber harvest or road construction in the project area. It does not preclude timber harvest from other areas or from the project area in the future. Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14(d)) require that a no action alternative be analyzed in every EIS.

This alternative represents the existing condition. It serves as a baseline for comparing the action alternatives for resources like wildlife habitat and soil disturbance. This alternative does not meet the purpose and need of supplying timber. If the need for timber production in the project area is not met, then timber would need to be supplied from other areas.

Alternative 2 - Proposed Action

Alternative 2 meets the purpose and need of this project and balances short-term timber supply/economic aspects (Issue 1) with the wildlife habitat/subsistence (Issue 3) and watershed issues (Issue 4). This alternative implements Forest Plan direction and works toward attaining its goals and achieving its objectives. It completely avoids harvest or road construction in inventoried roadless areas.

Alternative 3

Alternative 3 was developed to better address the timber supply and economics issue (Issue 1). This alternative would provide the most timber volume of all alternatives considered in detail. Under this alternative, unit design is such that volume and economic efficiency are emphasized within Forest Plan constraints. Alternative 3 meets the purpose and need of this project, implements Forest Plan direction, and works toward attaining its goals and achieving its objectives. It completely avoids harvest or road construction in inventoried roadless areas.

Alternative 3 includes modifications to some of the small OGRs in the project area. These modifications relocate portions of the small OGRs to be within the 2001 Roadless Rule inventoried roadless areas as much as possible from the current locations where there are existing roads. These roaded portions of the existing OGRs would then be allocated to LUDs where timber harvest would be allowed: i.e., Timber Production, Modified Landscape, and Scenic Viewshed (see Issue 2 in Chapter 1 of the FEIS). Determination of which LUD to allocate to each individual parcel is based on the adjacent LUDs and Visual Priority Travel Routes and Use Areas. In two cases, the current OGR exceeded the minimum acre requirements and acres were removed from the OGR and units were added to these acres with no replacement acres in roadless. The net change in the area of Old

Growth Habitat LUD within the project area would be an increase of about 590 acres (+1 percent). Among the development LUDs, Timber Production would decrease by 2 percent (1,104 acres), Modified Landscape would increase by 887 acres (+2 percent), and Scenic Viewshed would decrease by 372 acres (-8 percent) (FEIS Table OGR-1).

Commercial thinning of older young-growth stands was incorporated into Alternative 3. This would provide more volume and respond to the emphasis on transitioning to young-growth harvest.

Alternative 4

Alternative 4 emphasizes the wildlife and subsistence issue (Issue 3), but also considers each of the other three issues. It emphasizes landscape connectivity and the protection of key wildlife travel corridors and minimizing impacts to sensitive plants and wildlife species, including wolves, goshawks, black bears, deer, and marten. Under this alternative, impacts to biodiversity and wildlife were minimized by selecting harvest methods and prescriptions that would have a lighter touch on the landscape (i.e., resulting in less old-growth removal and less road construction) and deferring or modifying boundaries of proposed units that could impact habitat connectivity or impact sensitive plant populations. Alternative 4 includes commercial thinning of older young-growth stands as a mechanism for achieving desired timber volumes while having the benefit of improving habitat quality in closed canopy stands. It completely avoids harvest or road construction in inventoried roadless areas. Alternative 4 meets the purpose and need of this project, implements Forest Plan direction, and works toward attaining its goals and achieving its objectives.

A component of this alternative is the incorporation of the biologically preferred location for small OGRs in the project area as recommended by the interagency review team (including biologists from the Forest Service, U.S. Fish and Wildlife Service, and Alaska Department of Fish and Game). This resulted in portions of some small OGRs being allocated to a Modified Landscape or Timber Production Land Use Designation, as appropriate, based on the adjacent LUDs. The net change in the area of Old Growth Habitat LUD within the project area would be an increase of about 4,270 acres (+5 percent). Among the development LUDs, Timber Production would decrease by 1,037 acres (-2 percent), Modified Landscape would decrease by 2,590 acres (-4 percent), and Scenic Viewshed would decrease by 643 acres (-15percent) (FEIS Table OGR-1).

Alternative 5

Alternative 5 addresses watershed effects (Issue 4) and other issues by minimizing road construction, road-stream crossings, ground-based logging, and reducing harvest in watersheds with high levels of harvest within the past 30 years. Given these primary considerations, this alternative attempts to maximize timber supply. Alternative 5 includes commercial thinning units in older young-growth stands where thinning could improve watershed function, benefit wildlife, and contribute to harvest volume.

Alternative 5 completely avoids harvest or road construction in inventoried roadless areas and does not adjust OGR boundaries. Alternative 5 meets the purpose and need of this

project, implements Forest Plan direction, and works toward attaining its goals and achieving its objectives.

Environmentally Preferred Alternative

Alternative 1, the no-action alternative, would result in no environmental disturbance and is therefore the environmentally preferred alternative. Of the action alternatives, Alternative 4 is the environmentally preferred alternative for the project area. This alternative retains the most POG and retains the most connectivity, has the lowest increase in total road density, and would cause the least amount of soil disturbance.

Following is a table which compares the outputs and effects of the project alternatives, including the Selected Alternative.

Table ROD-9. Alternative Comparison By Alternative

Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	ROD
ISSUE 1: TIMBER SUPPLY AND TIMBER SALE ECONOMICS						
Timber Volume Estimates (MMBF)						
Sawlog (Net) Volume by Species						
Sitka Spruce	0	26.0	42.2	22.2	28.0	35.5
Western Hemlock	0	53.0	76.5	37.8	50.6	65.8
Western Redcedar	0	18.6	26.1	10.0	15.9	22.0
Alaska Yellow-Cedar	0	7.4	10.0	4.8	6.2	8.1
Total Old Growth Sawlog Volume	**0**	**105.0**	**139.8**	**62.6**	**88.6**	**116.3**
Total Young Growth Sawlog Volume	**0**	**0.0**	**15.0**	**12.3**	**12.1**	**15.0**
Total Sawlog Volume	**0**	**105.0**	**154.8**	**74.8**	**100.6**	**131.4**
Total Utility Volume	**0**	**16.1**	**20.9**	**9.6**	**13.4**	**17.5**
Total Volume (Sawlog + Utility)	**0**	**121.1**	**175.7**	**84.4**	**114.1**	**148.9**
Acres of Harvest by Logging System and Prescription (acres)						
Old-Growth (acres)						
Shovel, Even-aged harvest	0	1,875	2,338	405	1,068	2,170
Shovel, Uneven-aged harvest	0	0	0	9	0	0
Shovel, Two-aged harvest	0	0	0	292	0	0
Cable, Even-aged harvest	0	1,341	1,763	305	627	1,593
Cable, Two-aged harvest	0	0	0	26	0	0
Helicopter, Even-aged harvest	0	699	836	272	758	0
Helicopter, Uneven-aged harvest	0	1,205	2,182	3,440	2,999	2,424
Helicopter, Two-aged harvest	0	0	0	8	0	0
Subtotal Even-aged Harvest	**0**	**3,915**	**4,938**	**982**	**2,453**	**3,763**
Subtotal Uneven-aged Harvest	**0**	**1,205**	**2,182**	**3,449**	**2,999**	**2,424**
Subtotal Two-aged Harvest	**0**	**0**	**0**	**327**	**0**	**0**
Total Old Growth Harvest	**0**	**5,121**	**7,120**	**4,757**	**5,452**	**6,186**
Young-Growth (acres)						
Cable, Uniform Thin	0	0	478	355	357	478
Cable, Strip Thin	0	0	1,131	891	899	1,131
Ground-based, Uniform Thin	0	0	691	642	594	691
Total Young Growth Thinning	**0**	**0**	**2,299**	**1,888**	**1,850**	**2,299**
Total Treated Acres	**0**	**5,121**	**9,419**	**6,645**	**7,302**	**8,486**

Table ROD-9 (continued)

Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	ROD
ISSUE 1: TIMBER SUPPLY AND TIMBER SALE ECONOMICS (continued)						
Miles of Road Construction and Reconstruction						
New NFS Road	0	6.8	11.6	0.1	0.4	7.7
New NFS Road (Constructed on Decommissioned Road Grade)	0	1.5	2.3	0.1	0.4	2.3
New Temporary Road Construction	0	19.6	25.4	3.2	8.1	24.1
New Temporary Road (Constructed on Decommissioned Road Grade)	0	4.2	12.1	8.0	7.7	11.9
Total New Road Construction	**0**	**32.1**	**51.4**	**11.5**	**16.6**	**46.1**
Total Reconstruction of Stored (ML1) NFS Roads	**0**	**18.1**	**36.7**	**19.3**	**17.5**	**36.6**
Costs and Benefits						
Logging Costs ($/MBF) [1/]	$0	$240	$264	$318	$303	$247.26
Haul Cost ($/MBF) [2/]	$0	$47	$51	$51	$49	$50.85
Road Construction/Maintenance Costs ($/MBF) [3/]	$0	$55	$60	$33	$29	$63.07
Indicated Bid Value ($/MBF)[5/]	$0	$58.41	$17.01	($13.35)	$6.75	$23.77
Total Indicated Bid Value ($)	$0	**$6,130,787**	**$2,633,034**	**($998,866)**	**$679,628**	**$3,115,463**
Jobs Related to Logging [4/5/6/]	0	237	350	169	227	297
Jobs Related to Sawmilling [4/5/6/]	0	121-261	181-348	87-155	118-221	154-348
Jobs Related to Transportation and Other Services [4/5/]	0	72-120	119-175	62-85	79-114	119-149
Total Annualized Direct Jobs[4/5/6/]	**0**	**478-570**	**706-816**	**341-386**	**459-527**	**600-689**
Direct Income ($million) [6/]	0	25.1-26.9	37.0-39.1	17.9-18.8	24.1-25.4	$31.4 - $36.2
ISSUE 2—OLD GROWTH HABITAT LUD						
LUD Modifications (acres)						
Change in Old Growth Habitat LUD	0	0	+590	+4,270	0	+645
Change in Development LUDs	0	0	-590	-4,270	0	-645
Change in Suitable Timber (acres)						
Change in Mapped Suitable Timber	0	0	+1,174	-1,451	0	+543
Small OGR Modifications Metrics						
# Small OGRs Consistent with Forest Plan Acreage Requirements	11 of 11	11 of 11	11 of 11	11 of 11	11 of 11	11 of 11
Net change in POG in Small OGRs (acres)	0	0	-843	+2,029	0	+107
Sensitive/Rare Plants						
% of Project Area Lesser Round-leaved Orchid Individuals and Whiteflower Rein Orchid Individuals within OGRs	40%/51%	40%/51%	19%/44%	42%/59%	40%/51%	26% and 51%

Table ROD-9 (continued)

Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	ROD
ISSUE 3—WILDLIFE AND SUBSISTENCE USE						
Acres of Productive Old Growth (POG) Remaining						
Total POG						
Acres Remaining in Project Area	98,654	93,692	91,748	94,027	93,383	92,658
% Change from Existing	0%	-5%	-7%	-5%	-5%	-6%
% Change from1954	-34%	-37%	-39%	-37%	-38%	-38%
Acres Remaining in North Central POW Biogeographic Province	569,005	564,043	562,098	564,378	563,734	563,008
% Change from Existing	0%	-1%	-1%	-1%	-1%	-1%
% Change from 1954	-49%	-49%	-49%	-49%	-49%	-49%
High-volume POG						
Acres Remaining in Project Area	43,867	41,246	40,009	41,255	41,115	40,629
% Change from Existing	0%	-6%	-9%	-6%	-6%	-7%
% Change from 1954	-42%	-46%	-48%	-46%	-46%	-47%
Acres Remaining in North Central POW Biogeographic Province	248,324	245,703	244,456	245,712	245,571	245,086
% Change from Existing	0%	-1%	-2%	-1%	-1%	-1%
% Change from 1954	-59%	-59%	-59%	-59%	-59%	-59%
Large-tree POG						
Acres Remaining in Project Area	22,116	20,733	20,122	20,836	20,742	20,543
% Change from Existing	0%	-6%	-9%	-6%	-6%	-7%
% Change from 1954	-41%	-45%	-46%	-44%	-45%	-45%
Acres Remaining in North Central POW Biogeographic Province	127,295	125,912	125,301	126,015	125,921	125,722
% Change from Existing	0%	-1%	-2%	-1%	-1%	-1%
% Change from 1954	-57%	-57%	-57%	-57%	-57%	-57%
Number of POG Patches Remaining by Size Category (in Project Area)						
0-25 acres	308	838	923	716	811	926
26-100 acres	96	108	109	105	107	109
101-500 acres	35	36	38	38	37	37
500-1,000 acres	7	6	7	5	6	7
1,000+ acres	8	10	9	9	11	9
% change in total no. patches	0%	+120%	+139%	+92%	+114%	+140%
Acres of POG in Remaining Patches by Size Category (all patches intersecting Project Area)						
0-25 acres	3,039	3,653	3,756	3,350	3,529	3774
26-100 acres	4,726	5,384	5,497	5,153	5,268	5,451
101-500 acres	7,178	8,301	8,938	8,356	8,111	8,757
500-1,000 acres	4,812	4,457	5,276	3,592	4,279	5,292
1,000+ acres	82,604	76,189	72,991	78,567	77,113	73,799
% change in acres of interior forest habitat in project area	0%	-7%	-14%	-7%	-8%	-10%
Deer Winter Habitat Capability Change at Project Completion & After 25 Years (% of 2013 value/cumulative % change from 1954 value) NFS Land Only						
WAA 1315	0%/-7%	-4%/-11%	-7%/-14%	-4%/-11%	-5%/-12%	-5%/-44%
WAA 1318	0%/-5%	-4%/-8%	-5%/-9%	-3%/-7%	-4%/-8%	-5%/-12%
WAA 1319	0%/-4%	-5%/-9%	-6%/-10%	-5%/-9%	-5%/-9%	-6%/-28%
WAA 1420	0%/-11%	-5%/-16%	-9%/-20%	-4%/-15%	-5%/-16%	-6%/-48%
North Central Prince of Wales Biogeographic Province	-1%/-4%	-1%/-4%	-1%/-4%	-1%/-4%	-1%/-4%	-1%/-27%

Table ROD-9 (continued)

Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	ROD
ISSUE 3—WILDLIFE AND SUBSISTENCE USE (continued)						
Deer Winter Habitat Capability Change at Project Completion & After 25 Years (% of 2013 value/cumulative % change from 1954 value) All Lands						
WAA 1315	-41%/-45%	-44%/-47%	-45%/-49%	-43%/-47%	-44%/-48%	-11%/-48%
WAA 1318	-8%/-12%	-11%/-15%	-12%/-16%	-11%/-14%	-11%/-15%	-9%/-16%
WAA 1319	-24%/-27%	-27%/-30%	-28%/-31%	-27%/-30%	-27%/-30%	-10%-31%
WAA 1420	-46%/-52%	-48%/-54%	-51%/-57%	-48%/-55%	-49%/-55%	-17%/-54%
North Central Prince of Wales Biogeographic Province	-26%/-29%	-27%/-29%	-27%/-29%	-27%/-29%	-27%/-29%	-4%/-29%
Acres of Deer Winter Range Harvest						
Acres of deep-snow deer winter range harvest (WAAs 1315, 1318, 1319, 1420)	0	1,537	2,385	1,319	1,613	1,798
% Change from Existing (by WAA)	0%	-3% to -7%	-6% to -13%	-2% to -6%	-3% to -7%	-3% to -7%
% Change from 1954 (by WAA)	-35% to -69%	-39% to -70%	-40% to -73%	-39% to -69%	-39% to -71%	-40% to -70%
Goshawk Habitat Harvest						
Acres of POG & High Volume POG harvest	0/0	4,962/2,621	6,906/3,859	4,627/2,612	5,271/2,752	5,996 and 3,238
% Change from Existing (by VCU)	0%	0 to -15%/ 0 to -22%	0 to -15%/ 0 to -26%	0 to -16%/ 0 to -29%	0 to -16%/ 0 to -27%	-<1 to -23% / -<1 to -25%
% Change from 1954 (by VCU)	0 to -61%/0 to -82%	-1% to -65%/-1 to -84%	-4% to –66%/-6% to -85%	0 to -67%/0 to -83%	-3% to -67%; -5% to -85%	-1% to -66%/-1% to -85%
Marten Deep Snow Winter Habitat Harvest						
Acres of harvest (WAAs 1315, 1318, 1319, 1420)	0	1,537	2,385	1,319	1,613	1,798
% Change from Existing (by WAA)	0%	-3% to -7%	-6% to -13%	-2% to -6%	-3% to -7%	-3% to -7%
% Change from 1954 (by WAA)	-35% to -69%	-39% to -70%	-40% to -73%	-39% to -69%	-39% to -71%	-40% to -69%
Road Density by Wildlife Analysis Area (WAA) Below 1,200 feet						
Road density—Open & Closed Roads (NFS and non-NFS lands)						
WAA 1315	2.7	2.7	2.8	2.7	2.7	2.8
WAA 1318	2.4	2.5	2.5	2.4	2.5	2.5
WAA 1319	1.6	1.7	1.7	1.6	1.7	1.7
WAA 1420	2.4	2.5	2.5	2.4	2.4	2.5
Road density—Open & Closed Roads (NFS lands only)						
WAA 1315	2.1	2.3	2.3	2.1	2.1	2.3
WAA 1318	0.7	0.8	0.8	0.7	0.7	0.8
WAA 1319	1.6	1.7	1.7	1.6	1.7	1.7
WAA 1420	2.5	2.6	2.6	2.5	2.5	2.6

Table ROD-9 (continued)

Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	ROD
ISSUE 4—CUMULATIVE WATERSHED EFFECTS[7/]						
Subwatersheds with more than 20% of Basin Area Harvested from 1981 to present (young growth 30 years of age or younger) including reasonably foreseeable projects.	• North Big Salt Lake • N. Kasaan Bay Frntge • Pin[8/] • Thorne Bay	• North Big Salt Lake • N. Kasaan Bay Frntge • Pin[8/] • Thorne Bay	• Deer Cr. • Luck Lake • North Big Salt Lake • N. Kasaan Bay Frntge • Pin • Thorne Bay	• North Big Salt Lake • N. Kasaan Bay Frntge • Pin[8/] • Thorne Bay	• North Big Salt Lake • N. Kasaan Bay Frntge • Pin[8/] • Thorne Bay	• North Big Salt Lake • N. Kasaan Bay Frontage • Pin[8/] • Thorne Bay
Total miles of new road construction (including construction over decommissioned road beds)	0	32	51	11.5	17	46
Subwatersheds with more than 2.5% of basin area in roads (includes reasonably foreseeable and Big Thorne roads)	• Deer Creek • Pin[8/] • Ratz Harbor • Salamander • Slide Creek • Thorne Bay • Thorne R. Intertidal [9/] • Torrent	• Deer Creek • Pin[8/] • Ratz Harbor • Salamand.[8/] • Slide Creek • Thorne Bay • Thorne R. Intertidal [8,9/] • Torrent	• Deer Creek • Pin • Ratz Harbor • Salamander • Slide Creek • Thorne Bay • Thorne R. Intertidal [9/] • Torrent	• Deer Creek • Pin[8/] • Ratz Harbor • Salamd.[8/] • Slide Creek • Thorne Bay • Thorne R. Intertidal [9/] • Torrent	• Deer Creek • Pin[8/] • Ratz Harbor[8/] • Salamd.[8/] • Slide Creek[8/] • Thorne Bay • Thorne R. Intertidal [9/] • Torrent	• Deer Creek • Pin[8/] • Ratz Harbor • Salamander • Slide Creek • Thorne Bay • Thorne River Intertidal [9/] • Torrent
New Class I & II stream crossings – new roads	0	6	14	0	0	10
New Class I & II stream crossings – new construction on decommissioned road beds	0	3	9	5	3	9
New Class III stream crossings[10/]	0	9	15	3	2	15

Notes:
1/ The harvesting costs for an operator of average efficiency.
2/ Haul Cost: Cost of round-trip truck transport to Klawock or Goose Creek, based on average distance and speed for each alternative.
3/ Estimated average cost of new road construction, existing road reconstruction, and maintenance.
4/ Memo Employment Coefficients and Indirect Effects, for NEPA planning: 2011 Update; Source: Susan Alexander, Alaska Region Economist.
5/ Sawmilling employment is based on a range, from maximum possible shipment out of state (up to 50 percent of hemlock and Sitka spruce, and all Alaska yellow cedar), to no shipment of hemlock and Sitka spruce and export of 50 percent of the Alaska yellow cedar. Although all Alaska yellow cedar sold from the Tongass National Forest can be exported to foreign markets, regional sawmills often manufacture the species into high value lumber.
6/ Sawmill income is based on the same assumptions as employment and is presented as a range.
7/ Analysis conducted at both the watershed and subwatershed scales. Cumulative effects presented in this table are for subwatersheds.
8/ No harvest or roads constructed under this alternative. Threshold exceedences are due to past and reasonably foreseeable actions.
9/ Clipped to land area and does not contain marine areas.
10/ Includes both new roads and new construction on decommissioned roadbed.

ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Several additional alternatives were proposed internally or by the public during scoping and review of the Big Thorne Draft EIS. The IDT considered a No New Roads Alternative; a Small and Large OGR Modification Alternative; a Yellow Cedar Alternative and a Small Sales Alternative. More discussion of these alternatives is located in Chapter 2 of the Final EIS, Alternatives Considered but Eliminated from Detailed Study.

PUBLIC INVOLVEMENT

Public involvement is a key component of the planning process; it has been instrumental in identifying issues and developing alternatives for the Big Thorne Project. Public meetings, Federal Register notices, newspaper ads, government-to-government consultation, group and individual meetings, and the Tongass National Forest Schedule of Proposed Actions (SOPA) were used to seek input for this project.

The Big Thorne Project was first listed in the SOPA for the Tongass National Forest on April 1, 2010. Scoping letters were sent out to those on the mailing list on February 9, 2011 and the Notice of Intent to prepare an EIS was published in the Federal Register on February 11, 2011. Public scoping meetings were held in late February and early March 2011 in the communities of Thorne Bay, Naukati, Coffman Cove, and Craig.

The Notice of Availability for the Draft EIS was published in the Federal Register on October 26, 2012. EIS meetings and subsistence hearings were conducted in the communities of Thorne Bay, Coffman Cove, and Craig during early December 2012.

From 2010 to 2012, informal meetings were held regarding the Big Thorne Project with members of the public and stakeholder groups. During the same period, government-to-government consultation on the Project was conducted with federally recognized tribal governments and tribal corporations. Meetings, reviews, and professional dialogue also occurred with other federal and state agencies during this period.

Chapter 1 of the Big Thorne Project Final EIS provides more detailed information concerning public involvement as well as the timing of public involvement activities. A complete list of all members of the public, groups, and agencies that received a copy of the Draft EIS is located in Chapter 4 of the Draft EIS. The responses to comments are printed in Appendix B of the Final EIS. Documentation of the subsistence hearings is located in the project record.

PROJECT RECORD

The project record includes the Draft EIS and Final EIS, Forest Plan, all material incorporated by reference and other critical materials produced during the environmental

analysis of this project. The project record is available for review at the Thorne Bay Ranger District in Thorne Bay, Alaska.

MITIGATION

The analysis documented in the Final EIS discloses the possible adverse effects of implementing the actions proposed under each alternative. Forest Plan Standards and Guidelines were formulated to mitigate or reduce these effects. This direction was applied in the development of the project alternatives, including the Selected Alternative, and in the design of the harvest units and roads. Appendices 1 and 2 (Unit and Road Cards) of this ROD discuss any specific mitigation measures for the Selected Alternative. Mitigation that is not on the Unit or Road cards is listed below.

- In order to avoid the introduction of new invasive plants into the project area, ground-based equipment (road building equipment, yarders, shovels, skidders, forwarders, harvesters, processors or feller bunchers, etc.) will be cleaned prior to implementation and mobilization, if the equipment is moved to Prince of Wales Island from off the island.
- Only Forest Service approved rock sources will be used.
- Any new introductions of high-priority invasive plants found in the Project Area will be treated according to Forest Service Manual supplement (TNF 2000-2007-1), and the Region 10 and Tongass Invasive Plant Management Plan as part of the District's program of work for invasive species management.
- The specific invasive plant populations in FEIS Table INV-2 have been identified for manual treatment (hand-pulling) or monitoring based on their limited distribution in the project area, potential for spread, and feasibility for treatment.
- Existing and proposed rock pits with the potential for having iron pyrite crystals will be tested prior to using them. If there would be the potential for Acid Rock Drainage (ARD) impacts the rock source will not be used. New road construction through areas suspected of having iron pyrite crystals will be tested prior to road construction. Present or reasonably foreseeable actions or new construction on these roads in this rock formation will be tested for sources with high potential and be avoided. If Acid Rock Drainage potential rock is disturbed, mitigation would include lining the upslope ditch with limestone aggregate to neutralize run-off from potential mineralized zones exposed during full bench construction.
- Units 1, 4, 22, 26, 405, 516, 520 and 531 may have concerns with property boundaries. If, during layout, there appears to be a potential for crossing on to non-NFS land then a landline survey will be completed prior to harvest.

MONITORING

Monitoring is a tool which involves gathering data and information and observing the results of management activities as a basis for evaluation. Monitoring activities can be divided into project-specific monitoring and Forest Plan monitoring. The NFMA requires national forests to monitor and evaluate their Forest Plans (36 CFR 219.110). Chapter 6 of the Forest Plan includes the monitoring activities to be conducted as part of the Forest Plan implementation. Monitoring of the Selected Alternative will be done during implementation and as part of the Forest Plan monitoring program. Specific monitoring items are outlined in Chapter 2 of the Final EIS. These monitoring items (that apply to Alternative 3) are part of this decision and will be implemented. There is a botany monitoring plan that is part of this decision.

FINDINGS REQUIRED BY LAW

Alaska National Interest Lands Conservation Act (ANILCA) of 1980; Section 810

Subsistence Evaluation and Findings

The decision on the Forest Plan concluded that "implementation of the Forest Plan may result in a significant restriction to subsistence use of deer due to the potential effects of projects on the abundance and distribution of these resources, and on competition for these resources" (2008 Forest Plan Amendment ROD, p. 61). A subsistence evaluation was conducted for the five EIS alternatives, in accordance with Alaska National Interest Lands Conservation Act (ANILCA) Section 810. ANILCA 810 subsistence hearings were conducted in Thorne Bay, Coffman Cove, and Craig, Alaska in early December 2012.

The subsistence evaluation concluded that, the Selected Alternative will not have a significant possibility of a significant restriction of subsistence uses for bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots (Issue 3, Chapter 3, Wildlife and Subsistence section, in the Final EIS). However, this evaluation concluded that, in combination with other past, present and reasonably foreseeable future actions, all of the action alternatives may result in a significant restriction of subsistence uses of deer, due to potential effects on abundance, distribution, and competition. This determination is based on an anticipated increase in human population, an associated increase in subsistence activities, and the capability of the habitat to produce deer and the cumulative and direct effects of past timber harvest and the current project/decision. As a result of this finding, the Forest Service will notify the appropriate State agencies, local communities, the Southeast Alaska Federal Subsistence Regional Advisory Council, and State Fish and Game Advisory Committees.

Section 810 (a)(3) of ANILCA requires that when a use, occupancy, or disposition of public lands may result in a significant possibility of a significant restriction, a determination must be made whether (1) such a restriction is necessary, consistent with sound management principles for the utilization of public lands, (2) the proposed activity involves the minimum amount of public lands necessary to accomplish the purposes of the

use, and (3) reasonable steps will be taken to minimize adverse impacts on subsistence uses and resources resulting from the actions.

Using the information described earlier in this section, the alternatives were evaluated for potential effects on subsistence uses and needs, as described above.

Necessary and Consistent with Sound Management of Public Lands
The Selected Alternative has been reviewed to determine whether it is necessary and consistent with sound management of public lands. In this regard, the National Forest Management Act, the Alaska National Interest Lands Conservation Act, the Tongass Timber Reform Act, the Wilderness Act, the Tongass Land and Resource Management Plan, and the Alaska State Forest Resources and Practices Act have been considered.

ANILCA placed an emphasis on the maintenance of subsistence resources and lifestyles. However, this Act also required the Forest Service to make timber available for harvest from the Tongass National Forest. The Forest Plan determined which uses are suitable for various areas of land within the Tongass National Forest through land use designation (LUD) and management prescriptions. The Forest Plan allocated many important subsistence use areas to LUDs that do not allow timber harvest. The Forest Plan has determined that the Big Thorne project area should be managed mostly for varying levels of timber production (Timber Production LUD, Scenic Viewshed LUD and Modified Landscape LUD) but with recognition of the other resource uses (see Forest Plan, Chapter 3). The Selected Alternative will help achieve some of these multiple-use management objectives in the Forest Plan. Based on the analysis presented in the Big Thorne FEIS, the findings in this ROD and the analysis for the Forest Plan, I have determined that the Selected Alternative strikes a balance between meeting the resource needs of the public and protecting the forest resources.

Amount of Public Land Necessary to Accomplish the Proposed Action
The amount of land necessary to implement the Selected Alternative, considering sound multiple-use management of public lands, is the minimum necessary to accomplish the purpose of this project. The entire forested portion of the Tongass is used by at least one rural community for subsistence deer hunting, at a minimum. It is not possible to avoid all of these areas in implementing resource use activities, such as timber harvesting and road construction, and attempting to reduce effects in some areas can mean increasing the use of others. The current Forest-wide Standards and Guidelines and LUD prescriptions provide for management or limit activities in many of the areas that are most important for subsistence uses, such as beaches and estuaries, and areas with high fish and wildlife habitat values.

Reasonable Steps to Minimize Adverse Impacts to Subsistence Uses and Resources
Subsistence use is addressed specifically in a Forest-wide Standard and Guideline, and subsistence resources are covered by the Forest-wide Standards and Guidelines for wildlife, fish, riparian areas, and biological diversity, among others. Fish and wildlife habitat productivity will be maintained at the highest level possible for the Selected Alternative, consistent with the overall multiple-use goals and improved protection of the Forest Plan. The extent and location of the subsistence use areas in the Big Thorne project area make it impossible to completely avoid subsistence areas during timber harvest. However, large areas of deer habitat are protected in old-growth habitat reserves, riparian,

beach buffers and other non-development LUDs. Fish habitat is protected in each alternative through the application of Forest Plan Standards and Guidelines. Existing roads and logged areas are currently used for subsistence hunting and food-gathering activities. Please refer to Appendix 1 of this ROD, Chapter 3 of the FEIS, and the project record for more information.

Bald and Golden Eagle Protection Act of 1940 (as amended)

The Selected Alternative was designed to be in compliance with the interagency agreement established with the U.S. Fish and Wildlife Service (USFWS) to maintain habitat to support long-term nesting, perching and winter roosting habitat for bald eagles. Specifically, this memorandum of understanding restricts activities inconsistent with bald eagle use within a 330-foot radius from active bald eagle nest trees between March 1 and August 31. This agreement also places seasonal timing and activity restrictions for repeated helicopter flights within a quarter-mile of active nests and for road blasting activities within a half-mile of active nests. These requirements will be implemented if active nests are located in or adjacent to proposed activities. Almost all known bald eagle nest sites within the project area fall within the established 1,000-foot beach fringe buffer, therefore, Forest Plan Standards and Guidelines for bald eagle are met.

The Selected Alternative was designed to be consistent with national bald and golden eagle guidelines.

Clean Air Act of 1970 (as amended)

Emissions from the implementation of the Selected Alternative will be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 AAC 50).

Clean Water Act (1977, as amended)

Project activities meet all applicable State of Alaska Water Quality Standards. Congress intended the Clean Water Act of 1972 (Public Law 92-500) as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4) to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 addresses Federal agency compliance and consistency with water pollution control mandates. Agencies must be consistent with requirements that apply to "any governmental entity" or private person. Compliance is to be in line with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution."

The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices (also called best management practices, or BMPs) are recognized

as the primary control mechanisms for nonpoint source pollution on National Forest System lands. The EPA supports this perspective in their guidance, "Nonpoint Source Controls and Water Quality Standards" (August 19, 1987).

The Forest Service must apply BMPs that are consistent with the Alaska Forest Resources and Practices Act (AFRPA) to achieve Alaska Water Quality Standards. The site-specific application of BMPs, with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska's Nonpoint Source Pollution Control Strategy (2007). In 1997, the State approved the BMPs in the Forest Service Soil and Water Conservation Handbook (FSH 2509.22, July 2006) as consistent with AFRPA. This handbook is incorporated by reference into the Forest Plan and this project. A discharge of dredge or fill material from normal silvicultural activities such as harvesting for the production of forest products is exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404)(f)(1)(A). Forest roads qualify for this exemption only if they are constructed and maintained in accordance with Baseline Provisions to assure that flow and circulation patterns and chemical and biological characteristics of the waters are not impaired (404)(f)(1)(E). The Baseline Provisions that must be followed are specified in 33 CFR 323.4(a). These specific BMPs are incorporated into the Soil and Water Conservation Handbook under BMP 12.5. All necessary Clean Water Act permits will be obtained before project implementation, including, if necessary, any discharge permits under Section 402 of the Clean Water Act. The Forest Service recently issued National Core Best Management Practices (BMPs) (USDA Forest Service 2012). Directives for using these BMPs are currently in development. The project will implement the most up-to-date BMP guidance. The use of Best Management Practices will maintain State water quality standards.

The design of harvest units for the Selected Alternative was guided by standards, guidelines and direction in the Forest Plan and applicable Forest Service Manuals and Handbooks. Appendix 1 (Unit Cards) of this ROD contains specific details on practices prescribed to prevent or reduce nonpoint sediment sources.

As a result of the recent ruling of the Supreme Court in NEDC v. Brown that held that the Clean Water Act and its implementing regulations do not require a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from logging roads into the navigable waters of the United States, it is not anticipated that an NPDES permit will be required for this project. However, should it be determined that an NPDES permit is required for this project; the Forest Service will comply with any applicable permitting requirements.

Endangered Species Act (ESA) of 1973 (as amended)

A biological assessment was prepared and sent to the U.S. Fish and Wildlife Service (USFWS) and to the National Marine Fisheries Service (NMFS) as part of the Section 7 consultation under the Endangered Species Act. NMFS concurred with the findings of "not likely to adversely affect" the federally listed species on June 7, 2013 (National Marine Fisheries Service 2013). The biological assessment and letter of concurrence is included in the project record. No consultation with USFWS occurred as the determination for terrestrial species were all "no effect".

Federal Cave Resource Protection Act of 1988

There are occurrences of carbonate rock and associated cave resources in the Big Thorne project area. Field reconnaissance identified areas of concern. Forest Plan Standards and Guidelines will provide protection of these areas. The activities of the Selected Alternative will not have a direct, indirect, or cumulative effect on any significant cave in the Big Thorne project area.

Forest Service Transportation Final Administrative Policy (Roads Rule)

The Final EIS and this ROD are prepared to be consistent with the Forest Service Transportation Final Administrative Policy and the Tongass National Forest Level Roads Analysis (2003), Prince of Wales Access and Travel Management (2005) and the Big Thorne Project level analysis (2013). I have determined that the proposed road system is "the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands" (36 CFR 212.5).

Magnuson-Stevens Fishery Conservation and Management Act

The potential effects of the project on Essential Fish Habitat (EFH) were included in Chapter 3 of the Draft EIS. This discussion includes reference to the Magnuson-Stevens Fisheries Conservation Act that requires the Forest Service to consult with the National Marine Fisheries Service on projects that may affect EFH. It also includes a description of EFH in the project area, a description of the proposed activities, and a description of the measures that will protect these essential habitats. The Forest Service determined that the Big Thorne project may adversely affect EFH because fish streams are directly or indirectly affected by harvest and stream crossings. The Selected Alternative would result in minor effects on water quality and aquatic habitat. By following the standards and guidelines and BMPs in the Forest Plan, the effects on EFH will be minimized.

The Draft EIS was provided to the National Marine Fisheries Service to formally initiate the consultation process according to the agreement dated June 26, 2007 between the Forest Service and the National Marine Fisheries Service. NMFS had no comments.

Information on the mitigation measures and applicable standards and guidelines to minimize effects to EFH are discussed in Chapter 3 of the Final EIS and Appendices 1 and 2 of this ROD. A copy of the Final EIS and ROD were sent to NMFS. This satisfies the EFH consultation requirement based on the 2007 agreement with NMFS.

Marine Mammal Protection Act of 1972

Actions authorized in the Selected Alternative will not have a direct, indirect, or cumulative effect on marine mammals. Marine mammal viewing guidelines administered by the National Marine Fisheries Service (NMFS) and enforced by the Coast Guard are sufficient for their protection. Contractors, purchasers and employees will be required to follow provisions on Marine Wildlife Guidelines, including special prohibitions on

approaching humpback whales in Alaska as defined in 50 CFR 224.103. NMFS administers the Marine Mammal Protection Act (MMPA), which prohibits the "take" of all marine mammal species in U.S. waters. "Take" is defined as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." Harassment is defined in the MMPA as "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal stock in the wild by causing disruption of behavior patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."

National Forest Management Act (NFMA) of 1976 (as amended)

The National Forest Management Act (NFMA) requires specific determinations in the ROD: consistency with existing Forest Plans, a determination of clearcutting as the optimal method of harvesting, if used, and specific authorizations to create openings over 100 acres in size. Information and rationale used to develop unit prescriptions is shown on unit cards (Appendix 1 of this ROD), in Chapter 3 of the FEIS, and in the project record.

2008 Forest Plan Amendment

The 2008 Forest Plan Amendment was completed with the signing of the Record of Decision (ROD) on January 23, 2008. Big Thorne is a Category 3 project as listed in the Transition to the Amended Forest Plan, which includes "Timber sale projects for which a Draft Environmental Impact Statement has not been released for public comment before the effective date of this Plan. These projects shall be based on the amended Plan and will be consistent with all applicable management direction" (Forest Plan ROD, p. 70).

The ROD for the 2008 Forest Plan Amendment adopts the Timber Sale Program Adaptive Management Strategy, under which portions of the suitable land base become available for project-level planning in three phases. The Big Thorne project area is primarily within the Phase 1 portion of the suitable land base, but includes some Phase 2 lands.

I have determined that this decision and the Big Thorne Final EIS are consistent with the 2008 Forest Plan, except for the OGR modifications.

Clearcutting as the Optimal Method of Harvesting: The 2008 Forest Plan (pp. 4-71 to 4-72) and 1997 Forest Plan EIS (Appendix G, pp. G-7 to G-9) give guidance on when to use even-aged management. Clearcutting (an even-aged method) is used in this project to preclude or minimize the occurrence of potentially adverse impacts such as to remove or reduce mistletoe infestations, logging damage or other factors affecting forest health.

Specific information and rationale for use of this prescription is shown in the silvicultural prescriptions (which are a part of the project record), in the introduction to the unit cards and the individual unit cards (ROD, Appendix 1), and in Chapter 3 of the Final EIS. Where used, this prescription has been deemed optimal related to site-specific considerations as described above.

Harvest Openings Over 100 Acres in Size

I have determined that no openings will be created in excess of 100 acres with the harvest of the Selected Alternative units.

National Historic Preservation Act (NHPA) of 1966 (as amended)

Heritage resource surveys of various intensities were conducted in the analysis area in accordance with the Regional Inventory Strategy. A finding of "no historic properties affected" was recommended for all alternatives for the Big Thorne Project. Under the terms of the existing Programmatic Agreement with the Alaska State Historic Preservation Officer and the Advisory Council on Historic Preservation (USDA 2002, as amended 2010) "the Forest may proceed with the undertaking in lieu of a consensus determination of eligibility pursuant to 36 CFR 800.4."

Tongass Timber Reform Act (TTRA) of 1990

Forest Plan Riparian Standards and Guidelines apply to the Selected Alternative, and no commercial timber harvest will occur within 100 feet of any Class I stream or any Class II stream flowing directly into a Class I stream, as required in Section 103 of the TTRA. The design and implementation direction for the Selected Alternative incorporates best management practices (BMPs) and Forest Plan Standards and Guidelines for the protection of all stream classes.

Timber harvested under the Selected Alternative will provide part of the timber supply to the Tongass National Forest's timber program as stated in Section 101 of TTRA "… the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the annual market demand from such forest for each planning cycle."

EXECUTIVE ORDERS

Executive Order 11988 (Floodplains)

Executive Order 11988 directs federal agencies to take action to avoid, to the extent possible, the long- and short-term adverse effects associated with the occupancy and modification of floodplains. The Selected Alternative does not affect floodplain occupancy. The numerous streams in the Big Thorne project area make it essentially impossible to avoid all floodplains during timber harvest and road construction. However, Forest Plan Standards and Guidelines limit riparian harvest to the extent feasible to facilitate road construction and logging operations.

The amount of road in floodplains will be minimized whenever possible as stated in the BMPs. Roads may be constructed in or through floodplains subject to BMPs, which minimize floodplain modification.

Executive Order 11990 (Wetlands)

Executive Order 11990 requires federal agencies to avoid, to the extent possible, the long and short-term adverse effects associated with the destruction or modification of wetlands.

There will be minimal loss of wetlands, less than 66 acres, (due to proposed road construction) with the Selected Alternative. In some areas, soil moisture regime and vegetation composition or structure may be altered due to adjacent road construction; however, these altered acres will still be classified as wetlands and function as wetlands in the ecosystem.

Road construction through wetlands is avoided to the extent practicable. Where wetlands cannot be avoided, road construction will adhere to State-approved BMPs, which include at a minimum the federal baseline provisions in 33 Code of Federal Regulation (CFR) 323.

Executive Order 12898 (Environmental Justice)

Executive Order 12898 directs federal agencies to address whether a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribes is likely to result from the proposed action and any alternatives.

Minority communities in the vicinity of the project area include Klawock and Kasaan, both of which are home to federally recognized tribes. Thorne Bay, the only community located inside the project area, is predominantly White. None of the alternatives are expected to have a disproportionately high and adverse effect on the health or well-being of the minority or low-income populations that use the project area. Any changes in consumption patterns and wild food resources, as well as other project effects, would be equally applicable to the general population.

The Executive Order directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. Although low-income and minority people are not the sole users of these resources in Alaska, the effects on these resources are addressed in Chapter 3 of the FEIS.

Executive Order 12962 (Aquatic Systems, Recreational Fisheries)

Executive Order 12962 requires federal agencies to evaluate the effects of proposed activities on aquatic systems and recreational fisheries. The Selected Alternative minimizes the effects on aquatic systems through project design, application of standards and guidelines, BMPs, and site-specific mitigation measures. In the Selected Alternative, recreational fishing opportunities will remain essentially the same as the current condition because aquatic habitats are protected through implementation of BMPs and riparian buffers.

Executive Order 13007 (Indian Sacred Sites)

Executive Order 13007, Indian Sacred Sites, provides presidential direction to federal agencies to give consideration to the protection of American Indian sacred sites and allow access where feasible. In a government-to-government relationship, the tribal government is responsible for notifying the agency of the existence of a sacred site. A sacred site is defined as a site that has sacred significance due to established religious beliefs or ceremonial uses, and which has a specific, discrete, and delineated location that has been identified by the tribe. Tribal governments or their authorized representatives have not identified any specific sacred site locations in the project area.

Executive Order 13112 (Invasive Species)

Executive Order 13112 requires federal agencies (in part) to evaluate whether the proposed activities will affect the status of invasive species; and to not carry out activities that promote the introduction or spread of invasive species unless it has determined that the benefits of such action outweigh the potential harm caused by invasive species; and that all feasible and prudent measure to minimize risk of harm will be taken in conjunction with the actions. The Selected Alternative implements specific measures to minimize the introduction and spread of invasive species.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

Executive Order 13175 directs federal agencies to respect tribal self-government, sovereignty, and tribal rights, and to engage in regular and meaningful government-to-government consultation with tribes on proposed actions with tribal implications.

Throughout the span of the Big Thorne Project, the District Ranger and archaeologists have communicated with the Central Council of the Tlingit and Haida Indian Tribes of Alaska, Craig Community Association, Klawock Cooperative Association, Hydaburg Cooperative Association, Organized Village of Kasaan, Wrangell Cooperative Association, Ketchikan Indian Community, Haida Corporation, Kavilco Inc., Klawock – Heenya Corporation, Sealaska Corporation, and Shaan – Seet Inc., as described in Chapter 1 of the Final EIS. Tribal consultation does not imply that the tribes endorse the selected action or any of the alternatives.

Executive Order 13186 (Migratory Birds)

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but its scope is not just limited to waterfowl. The migratory species that may stay in the area utilize most, if not all, of the habitats described in the analysis for breeding, nesting, and raising their young. The effects on these habitats were analyzed for this project.

The decision will not have a significant direct, indirect, or cumulative effect on any migratory bird species in the project area. There may be direct moderate effects on

individuals or small groups and their nests from the harvest of timber or the disturbance caused by harvest and related activities.

Executive Order 13443 (Facilitation of Hunting Heritage and Wildlife Conservation)

Executive Order 13443 directs federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. The analysis considered and disclosed the effects on hunting activities. The Selected Alternative will maintain the current hunting opportunities by adhering to the Forest Plan Standards and Guidelines that maintain habitat for hunted species.

FEDERAL AND STATE PERMITS

Federal and State permits necessary to implement the authorized activities are listed at the end of Chapter 1 in the FEIS.

IMPLEMENTATION PROCESS AND PROCESS FOR CONSIDERING CHANGES AND NEW INFORMATION

Implementation of this decision may occur no sooner than 50 days following publication of the legal notice of the decision in the *Ketchikan Daily News*, the newspaper of record, published in Ketchikan, Alaska. The timber may be offered in one or more sales.

Appendices 1 and 2 of this ROD contain the Selected Alternative unit and road cards. These cards are an integral part of this decision because they document the specific resource concerns, management objectives, and mitigation measures to govern the layout of the harvest units and construction of roads. These cards will be used during the implementation process to assure that the project is implemented within applicable standards and guidelines and that resource effects will not be greater than those described in the Final EIS. Similar cards will document any changes to the planned layout, which may occur during implementation.

Minor changes are expected during implementation to better meet on-site resource protection objectives and improve logging system efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act, and other laws concerning such changes.

The changes will be within the direction in Forest Service Manual (FSM) 2430 and Forest Service Handbook FSH 2409.18. This direction provides a link between project planning and implementation. This will ensure the proper execution of the decision, environmental

standards, and mitigations approved by this decision, and compliance with the Forest Plan and all applicable laws, policy and direction.

Changes made during implementation will be reviewed, documented, and approved by the Responsible Official through the Tongass Change Analysis process described in FSH 1909.15-2009-1. In determining whether and what kind of NEPA action is required for changes during implementation, the Forest Supervisor will consider the criteria in the Code of Federal Regulations (40 CFR 1502.9(c)), and Forest Service Handbook (FSH) 1909.15, sec. 18 to determine whether to supplement or revise an existing environmental impact statement. I will determine whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. I will consider connected or interrelated changes to particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

The implementation unit and road cards, as approved by this process are incorporated into the contract. The sale administrators and road inspectors then enforce the contract requirements with the operators.

The implementation record for this project will display:

- Each harvest unit, transportation facility, and other project components as actually implemented,
- Any proposed changes to the design, location, standards and guidelines, or other mitigation measures for the project, and
- Authorization of the proposed changes.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS.

RIGHT TO APPEAL

This decision is subject to administrative review (appeal) pursuant to Title 36 CFR Part 215. Individuals or organizations who submitted comments during the comment period specified at CFR 215.6 may appeal this decision. The notice of appeal must be in writing, meet the appeal content requirements at CFR 215.14 and be filed with the Appeal Deciding Officer:

Beth Pendleton, Regional Forester
Alaska Region
US Department of Agriculture
709 W. 9th Street
P.O. Box 21628
Juneau, AK 99802-1628
Email address: FS-appeals-alaska-regional-office@fs.fed.us
Fax (907) 586-7840

The Notice of Appeal, including attachments, must be filed (regular mail, fax, e-mail express delivery or messenger service) with the Appeal Deciding Officer at the correct location within 45 calendar days of the date that the legal notification of this decision is published in the Ketchikan Daily News, the official newspaper of record. The publication date in the newspaper of record is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

Hand-delivered appeals will be accepted at the Regional Office during normal business hours (8:00 am through 4:30 pm) Monday through Friday, excluding holidays.

Implementation of decisions subject to appeal pursuant to 36 CFR Part 215, may occur on, but not before, 5 business days from the close of the appeal filing period, if no appeals are received.

For additional information concerning this decision, contact Rachelle Huddleston-Lorton, District Ranger, Thorne Bay Ranger District, 1312 Federal Way, P.O. Box 19001, Thorne Bay, AK 99919-0001, or call (907) 828-3304.

6-28-2013

FORREST COLE Date

Forest Supervisor

Record of Decision